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Original Department.

Electrical Batteries and Their Use.*

By C. L. Dana, M. D., New York City.†

GENTLEMEN:—Despite much that has been said against the value of electricity, it is becoming more and more the custom of physicians to equip themselves with electrical batteries when starting out in practice. The number of manufacturers of these batteries has lately increased, and I am informed that all of them make and sell many more instruments each year.

You wish to know where to get the best batteries, what kinds to get, and how to take care of them and use them. I will try to say something upon these points as briefly as I can.

Electricity and magnetism are forms of the same force, but they show themselves in different conditions and have correspondingly different physiological and therapeutical effects.

The three forms in which the therapeutist uses electricity are the static, the induced and the galvanic. We have accordingly static electrical batteries, batteries generating faradic or induced electricity, and galvanic electrical batteries.

In order to understand the differences in the effects of these batteries, you will allow me first to say a word regarding the physical nature of the force, electricity.

We suppose electricity, like light and chemism, to

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be a mode of molecular motion. That hypothesis is not of much use, however, in explaining the ordinary electrical phenomena: Therefore it is assumed that every substance is permeated with two imponderable fluids. Under ordinary conditions these fluids are united and in equilibrium; but by certain agencies, such as friction, heat, chemism, etc., they can be separated. Then we have electrical phenomena, which we recognize as due to these two fluids, positive and negative electricity, that have been separated and are trying to get together again. We assume that the condition of electrical equilibrium is that of zero, and that the earth's electricity is at zero. Positive electricity is raised above, negative electricity pulled below this zero point. All electricity phenomena, I repeat, result from attempts of the fluids to become equalized or stable again at the zero point, just as all the phenomena of heat result from differences of temperature, and those of gravity from differences of pressure. The distance to which the electrical fluids are separated from the zero point is spoken of as the difference in "potential." This *potential* corresponds to the term degrees in measuring heat. Now, the greater the difference in potential the greater the effort of the fluids to return to zero. High and low potentials correspond to high or low intensity of heat. *Tension* is the result of the widely separated fluids striving to return to the zero point. Electrical tension is an important characteristic to understand, as it has much to do with electro-physiological and therapeutical results. When the two fluids, at different potentials, attempt to become equalized they pass along certain paths and form *electrical currents.* Electricity will pass along any substance, but some substances conduct it more easily than others, and these are known as *conductors.* I have here a table showing the relative value of different conductors. They have the following resistance, that of mercury being taken as 1.:

Mercury	1.	Sulphuric acid	47,000
Silver	0.017	Commercial nitric acid	18,000
Copper	0.018	Sol. sulphate of zinc	288,000
Zinc	0.057	Sol. sulphate of copper	306,000
Platinum	0.092	Dilute acids or salts	from 10,000 to 300,000
Iron	0.099	Human body	about same as dilute saline sol.
Gas carbon	43.	Pure water	12,000,000

The tissues of the human body are tolerably good conductors except only the skin. This offers a great deal of resistance, if it is dry, and it is, indeed, the main difficulty to be overcome in passing electrical currents through the body.

Those substances along which electricity passes with great difficulty are known as non-conductors or insulators. Of these, too, I show you here a list, the substances being arranged in accordance with their relative value as insulators:

Caoutchouc.
Silk.
Glass.
Wax.
Sulphur.
Resins. Shellac. Dry air.

The electrical fluids may be kept by insulators at different potentials, the insulators preventing them from becoming equalized, or reduced to the same potential. Electricity in this condition is called static, and it is always at a high tension.

Static electricity has the power of inducing another disassociation of the electrical fluids, in other bodies separated from it by intervening bodies. These intervening bodies are called *dialectrics.* The dialectrical bodies are analogous in function to the conductors of electrical currents. They are such substances as glass, dry air, gutta-percha, etc.

There are certain electrical terms which I wish to explain to you:

The *quantity* of electricity is the amount of electricity in a given body or on a given surface. The *electro-motive force* is the force which disassociates the two fluids, putting them at different potentials; electrical current results.

The *working-power* or *current strength* is the term used to express the capacity of the separated fluids to overcome resistance in their attempts to reach equilibrium or equalization again.

This working-power or current-strength naturally is in proportion to the strength of the electro-motive power which is constantly disassociating the fluids and generating the current. If, however, as is always the case, the electrical fluid meets resistance in seeking equlibrium, the resistance diminishes its working-power, or current-strength. Hence we have a common formula known as Ohm's law:

$$\text{Current Strength} = \frac{\text{Electro-motive Force.}}{\text{Resistance.}}$$

As I have said all bodies offer some resistance to electrical currents, and it is important to have some standard unit of resistance for the sake of comparison. Such standard unit has been adopted and is called an *ohm.* It is the resistance offered to a current by a certain piece of wire of definite size and length.

A *volt* is the unit of electro-motive force, *i. e.* it represents the force which will generate a certain amount of electricity in a second of time. A Daniel-cell is of about one volt strength.

A *weber* (or ampere, as it has been lately called) is the unit of working-power or current-strength. It is the current-strength produced by one volt of electro-motive force working against one ohm of resistance.

The *coulomb* is the unity of quantity and is the quantity of electricity given by one weber in a second of time.

I have gone over the foregoing points very briefly, and have left out much in the way of explanation. Sufficient has been said, however, I trust to render somewhat clear the discussion of the therapeutical and physiological effects of electricity which we take up now. The main things to be remembered in connection with the practical properties of electricity, are that it shows itself in different quantities and at a different tension. You can, if you wish, forget all the other things about electricity, and certainly I want you to forget many of the ancient terms which have confused the subject. The terms density and intensity, for example, can be ignored.

All medical batteries depend for their effects upon the quantity of electricity generated, the tension or difference of potential of the electrical force generated, and the variations in the duration or strength of the currents:

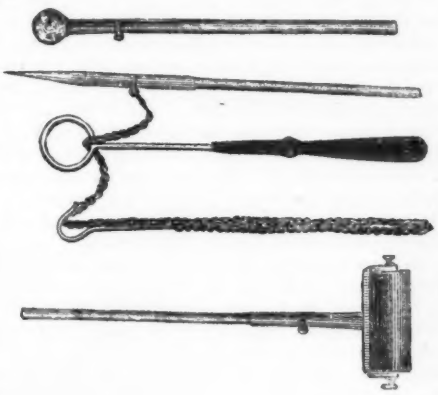
We come now to the practical subject of the different medical batteries.

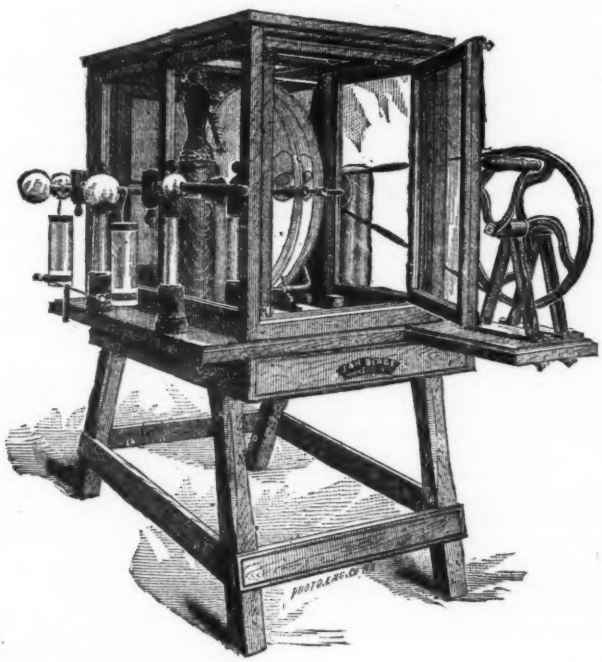
There are three kinds: The *static*, the *faradic* or induced, and the *galvanic.* Recollect, if you please, that the phenomena in all, depend upon the difference of potential in the same hypothetical electrical fluids.

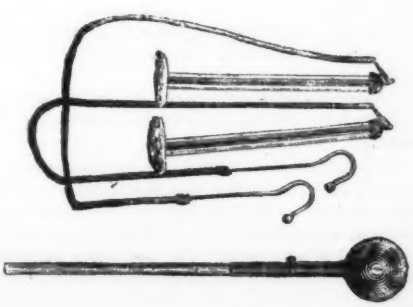
The *Static Electrical Batteries*, used for medical purposes, are all modifications of the Holtz electrical machine. They consist of two (or more) circular discs of glass, one revolving the other stationary, the latter being perforated with windows. The electricity is generated first by friction. The electrified plate then induces electricity upon its neighboring plate, from which latter it is conducted off and collected in Leyden jars that hang upon the two prime conductors. The positive electricity goes to one prime conductor, the negative to the other. For medical purposes the battery is supplied with an insulated platform upon which the patient sits. The electricity, as it is generated is conducted from one prime conductor to the platform and dispersed over whatever is upon it. The patient becomes covered, as it were, with a layer of electricity which is at a very high tension, and is constantly trying to escape and find its equilibrium. If the patient sits quiet and is not touched, he is kept in a kind of electrical bath, the electricity passing off at every point in his body and being continually renewed as long as the machine continues its work. It does not penetrate the body and exercises only a superficial effect upon the cutaneous nerves. If now you connect the other prime conductor with the earth, or a gas-pipe, by a chain and then make connection between the earth or another gas-pipe by a second chain, then finally suddenly connect with the patient by touching him with a brass electrode, you complete the circuit. The tense electricity bounds to its zero point with such force that it carries off some of the metallic parts of the electrode, causing a spark.

In this way by continually charging the patient and making connections upon him, you can draw off sparks from all parts of the body.

The trouble has always been with static batteries that they could not be made to work in warm weather on account of the moisture of the air. But, of late, better instruments have been made, which are covered with a glass case and which will act all the year round.







The machines are improved also upon the original Holtz model. We have the Carre, the Toepler-Holtz and other forms.

Excellent machines are now made in this country and it is not necessary to import them. J. & H. Berge, of New York City, make machines, one of which I have used for two years and a half, and it has never failed me. Queen, of Philadelphia, also makes a good machine, and MacIntosh, of Chicago, advertises them. They are of various sizes. I believe that those with the twenty-two inch plates are large enough, but I would not advise the use of smaller sizes. The cost varies from $150 to $400. The physician who buys one should be supplied with a certain number of electrodes: a medium-sized brass electrode, a wooden electrode, a brass-roller electrode, a sharp-pointed electrode with a ring and chains, are about all that are really needed.

By approximating the prime conductors so that they almost touch, and then connecting the outer surface of the two Leyden jars which hang from the prime conductors, with sponge electrodes, you can get the static induced current, first described by Dr. Wm. J. Morton, who has done much to popularize the use of static electricity in medicine.

This induced current has no special peculiarities and is not superior to that furnished by faradic batteries.

If you get a static machine, see that it will generate a spark at least seven or eight inches long between the two prime conductors when the Leyden jars are on. See also that the connections of the prime conductor and of the discharging electrodes are well made. Connections with different gas-pipes generally answers well.

Static electricity is at a very high tension, but is small in quantity. Its effects, therefore, are chiefly mechanical and—owing to the violence of the shocks and the brilliancy of the sparks—psychical. I have found it quite useful in the lighter forms of rheumatic and neuralgic pains, in stiffened joints of chronic or subacute rheumatism, in sciatica, lumbago, cervico-brachial and occipital neuralgiæ. It may be used also in paralyses with just as good effect as the faradic currents and often more conveniently. In hysterical cases it also acts well. I believe it to be an excellent tonic and can confirm the opinion of French electro-therapeutists, who regard it as producing similar effects with hydrotherapy. It is claimed to have a sedative effect in spasmodic conditions, but of this I have seen no illustration. It is a good cutaneous and muscular stimulant and counter-irritant, and produces effects by acting on the imagination, which are just as good as if they were produced in any other way.

You should treat the patient for from fifteen to thirty minutes at each seance, and repeat the seances daily at first. If you wish to lessen the strength of the sparks, put one foot on the platform or use a wooden electrode.

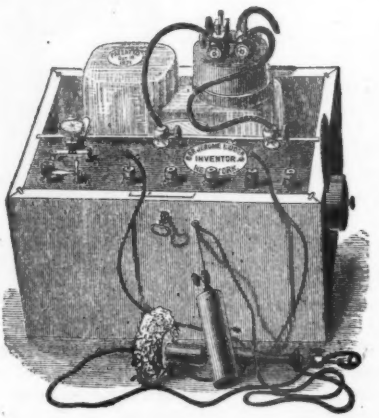
In warm weather have a piece of dry flannel and lay it over the part from which you are drawing the sparks.

In *Faradic Medical Batteries*, the electricity is produced by induction. The chief elements are a cell, and two coils of insulated copper wire. One coil is placed around the other, and the outer coil is longer and of finer wire. The cell which generates the original current does not generate the electricity which is received by the patient. This fact is not generally understood. This original current is so arranged that it is being constantly broken and closed again. At both break and make, a current is induced in the coiled wire. In the first coil, the current of "making" is sent through the battery-cell itself, and not through the patient. The current of breaking is, however, sent through the conducting cords of the electrodes and thus through the patient. This is called the primary induced current, and it is, as you see, made up of a succession of very short induced currents, all flowing in the same way; thus the current is always felt more strongly at the negative pole than at the positive. Hence by taking hold of the electrodes, you can at once distinguish between the two.

Apart from the greater strength of the negative pole, however, we cannot say that it has any different physiological effects.

Every time that a current in the primary coil is induced, it induces a secondary current in the outer coil, of an opposite direction. As a result, there is produced in the outer coil a constant succession of to-and-fro-currents, which can be conducted through the patient. The current of the outer coil is a to-and-fro one therefore, and has no positive and negative pole. It is stronger and has more tension than that of the primary coil. It is said by the French electro-therapeutists, to have less quantity and to be different in its physiological and other effects. This is not the case, however. Aside from its greater tension, or strength it has no therapeutical properties different from those of the primary coil. Some electrical instrument-makers have other coils which give a third, and even a fourth, induced current.

I know of no advantages in these, however. All that you want in a faradic battery is a primary and secondary current, and finally a union of the two which is stronger than either separate. The strength of the different currents is modified by metal tubes



which slip over the coils, and which, by interfering with induction, weaken the currents. You will observe that the faradic coils have in their centre a bar of soft iron which becomes magnetised and demagnitised, and this strengthens the induced currents in the coils. All the batteries have, also, a hammer, or spring lever for automatically breaking and making the current.

Good faradic batteries are now made by a great many firms. Kidder, the Galvano-faradic Company, Waite & Bartlett, Stammers, in New York; Fleming, in Philadelphia, McIntosh, in Chicago, are some of the better known firms. The batteries are very much alike. Most of them are run by the Grenet-cell of zinc and carbon, with an acidulated solution of bi-chromate of potash as a fluid.

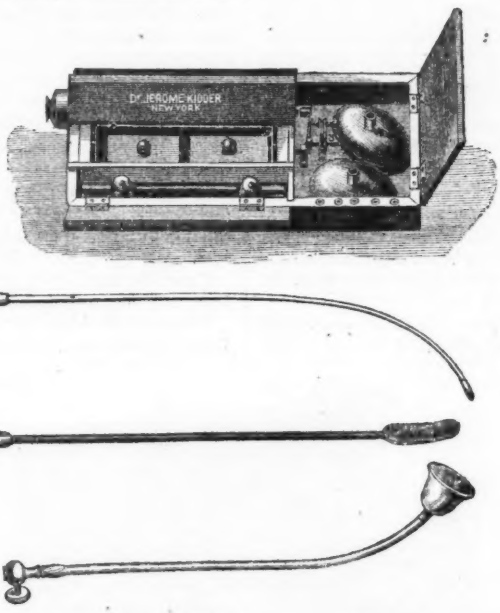
Kidder uses the Smee cell. I have recently devised and shown you a coil which is made so that it can be run by a single open-circuit cell, devised by Haid and sold by Bergmann & Haid, and by Stammers, of this city. The cell is a modification of the Leclanché, and is known as an open-circuit cell. The coil is small, portable and can be carried separately from the cell. The advantages of this form of battery are that it requires less attention, a very rare renewal of zincs, and is cleaner and more portable. It is also very cheap, costing only from $7 to $10. The main things to be looked out for in selecting a faradic battery are to have the interruptions by the automatic lever smooth and even, and to have the cell one which does not easily get out of order. Some batteries are made so that you can have slow or rapid interruptions as you wish, and it has even been claimed that in certain forms of paralysis you should only use the slow interruptions. I have never been able to find cases where slow interruptions were of any perceptible advantage, and there are no theoretical grounds for supposing that they would be so. If you get a smooth rapidly interrupted current, it will, I believe, answer all the purposes for which a faradic battery is intended.

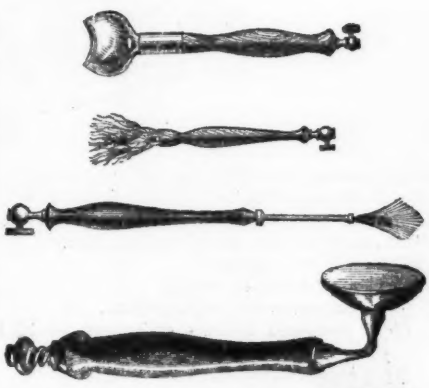
The small pocket batteries, made on the model of the Gaiffe batteries, are convenient for occasional use. But they are not very strong and do not last very long if frequently used.

Electro-magnetic batteries, in which the currents are generated by revolving magnets, are not used now, as they are harsh and disagreeable.

The magnetic battery with roller electrode, devised by Dr. John Butler, is, however, quite a useful thing for general faradization.

The French chloride of silver batteries are apt to get out of order, and I have not met any one in this country who recommends them.





As regards accessories, you should get two carbon-pointed, sponge-covered electrodes of moderate size; also one very small carbon electrode, and one very large one made of annealed brass, covered with sponge, backed with rubber and measuring six inches by four. You need also a metallic brush, and one of the handles to the electrodes should have an interrupter. In using the battery be sure that the electrodes are well moistened with warm water. You

may add a little vinegar or salt to the water if you wish, but it is not often necessary. If you are very anxious to get contractions, or deep effects, lay a cloth moistened in the salt water on the skin, and let it stay there for twenty minutes. Let the current pass for some time also, for the skin becomes a better conductor the longer the current runs through it.

You must remember in seeking for therapeutical effects with the faradic battery, that induced electricity is one of high tension and small quantity, like static electricity. Consequently its effects are primarily mechanical and counter-irritant. You can contract muscles, arouse nerve impulses, effect circulatory changes, and produce important reflex effects.

Galvanism. Much labor and ingenuity have been spent in devising cells for the generation of electricity. The number in use is large and I cannot attempt to enumerate them all, or discuss their various merits. For medical purposes we have now two kinds. The one includes the cells which act constantly when the current is closed. The other includes those which act whenever the elements composing the battery (*e. g.* zinc, carbon, platinum, copper, etc.), are both in the common fluid. The former class (known as two-fluid cells) are not touched except to renew water or add some chemical. In the latter (the single-fluid cells) one of the elements is always taken from the fluid when the current is in use.

The first class of cells have a much weaker chemical action, and evolve less electricity in a given time.

Grove's which has nitric acid and platinum, instead of sulphuric acid and copper.

Bunsen's, which is like Grove's, but has carbon instead of platinum.

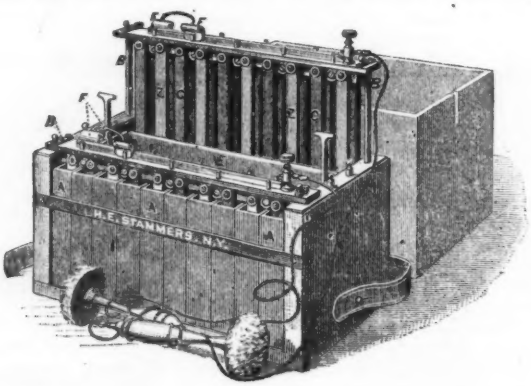
The Gravity cell; it is constructed in various ways, one of which is as follows: A cylindrical glass jar is about three-quarters filled with a solution of zinc sulphate. In the bottom is placed a piece of copper, to which is fastened the end of a piece of insulated wire, and this wire is led up above the edge of the jar. Some lumps of copper sulphate are thrown on the copper plate, and then a piece of zinc is suspended in the jar, so that its under surface is about half way from the bottom of the jar. It is found that the difference in the specific gravities of the copper and zinc solutions is sufficient to keep them apart, and it is from its being so constructed as to take advantage of this fact that the cell has its name.

The Siemens-Halske cell is similar to the gravity battery, except that a diaphragm of paper-maché is used to still further ensure the separation of the two solutions.

In the Leclanché battery manganic dioxide rereplaces the nitric acid in a Bunsen's battery, and chloride of ammonium solution the dilute sulphuric acid.

These batteries have a different electro-motive force and different internal resistance.

They may be classed as follows, according to Mr. Delafield (Archives of Medicine):



Those in medical use are the Daniell cell, the Gravity cell, the Siemen's-Halske cell (which latter is a modification of the Daniell), and the Leclanché cell, of which there are several modifications.

The Daniel's cell consists of

(1) A glass vessel containing,
(2) A sat. solution of cupr. sulphat.
(3) A perforated cylinder of copper (positive pole.)
(4) A porous clay vessel containing,
(5) Amalgamated zinc (negative pole) in a solution of
(6) Dilute sulphur. acid.

The sulphuric acid acts on the zinc, forming hydrogen. The H is brought over to the copper pole where it unites with the copper sulphate to form copper and sulphuric acid. Hence in Daniell's battery the sulphuric acid and copper plate are not used up. Only the zinc and sulphate of copper are used.

Other batteries on the same principle are:

Low Resistance.	High Electro-motive force.	Constancy.	Little trouble for short use.	Little trouble for long use.
Gravity (very large)	Leclanché,	Gravity, Daniell.	Dipping, Grove, Bunsen,	{ Leclanché { Gravity, Daniell.

The Siemen's-Halske has about the same properties as the Gravity. When ordering your cells get large jars and have them covered so as to prevent evaporation.

The electro-motive force of some of the different cells is about as follows:

Grove,	1.80 volts.
Bunsen,	2. "
Dipping,	2. "
Leclanché,	1.50 "
Gravity,	1. "
Siemen's-Halske,	1. "

Among the second class or single-fluid cells, the zinc-carbon cell, known as the Grenet or Stohrer's cell, already referred to, is most used. The Sinee cell is also a popular one for generating induction currents.

If you intend to purchase a galvanic battery, the first question is whether you shall get a stationary battery of two-fluid cells, of the first class above described, or a portable battery of the single-fluid or zinc-carbon cells. My advice always is to get a portable battery first, because it will supply

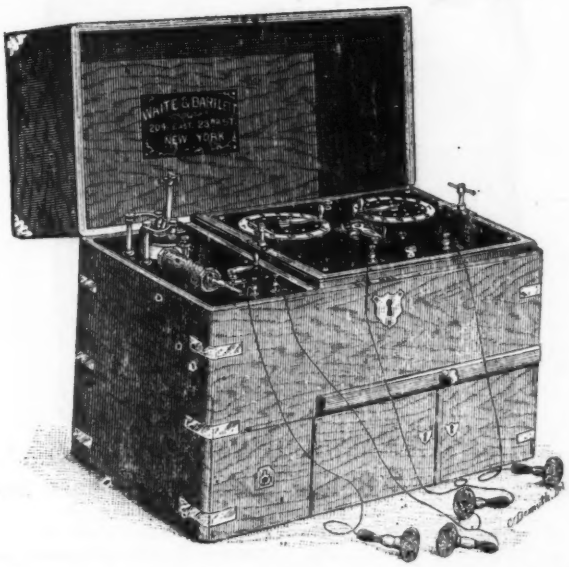
a larger range of needs; then get a stationary or office battery later, if possible, because they are more convenient to use, are more powerful, and probably will furnish better therapeutical effects.

If you decide to get a portable galvanic battery, any of the manufacturers whose names I have referred to, will supply one. In selecting a battery do not get one with less than thirty or thirty-six cells. It is a mistake to buy the cheaper and smaller batteries. For although twenty cells will answer for most purposes, you may at any time find that thirty-six cells will do what nothing else will.

All the portable galvanic batteries made in this country, so far as I know, that are of any value, have the zinc-carbon cell. In some the cell is larger, in some smaller. The smaller cells do not last quite so long, but the difference in current strength is imperceptible. Be sure only that you get a battery which is simply made and has good connections, and that there is an apparatus for reversing the current. An apparatus for causing rapid interruptions is also a useful thing. Hydrostats to prevent the fluid from spilling are not absolutely essential.

I do not advise you to get a combined galvanic and faradic battery, because these make the faradic apparatus less portable and you can buy the two batteries separately for nearly the same amount of money. McIntosh, Waite, and Bartlett, and the Galvano-Faradic Company and Kidder all make these combined batteries.

If you decide to have an office or stationary battery, your choice will be between the Daniell or Siemens-Halske's cell, the gravity cell and the Leclanché, or its modification, Bergmann & Haid's. The gravity-cell is the cheapest, costing only about sixty cents, the Siemens-Halske cell is perhaps a little more durable. The Leclanché has a greater electro-motive force, and fewer cells are needed, but it is more expensive. It cannot be used more than twenty minutes at a time without becoming polarized and injured. In my own office I have used the gravity cell, and with satisfaction. One does not often need more than forty Leclanché cells, or more than eighty gravity cells.



The accessory apparatus for galvanic batteries consists of the same electrodes above mentioned. This is really all that is generally needed. You can, however, supply yourself with special electrodes for the eye, ear, tongue, throat, and urethra, etc. You can also, with advantage, use a very large long electrode for the spine. Electrodes with an apparatus in the handles for reversing the current are also sometimes very useful.

No galvanometers are yet made in this country which are of very much value.* They indicate the presence and direction of the current, but that is all. If you wish a cheap galvanometer, buy a compass for a dollar. Get a dozen yards of fine insulated copper wire, wind it over a flat spool, and connect each end of the wire with your battery; place the compass upon the coil and pass the current through it and observe the deviations of the needle.

For practical purposes, the best way to test the presence and strength of galvanic currents is to hold one electrode in the hand and touch the other to the forehead. This should always be done before galvanism is applied to a patient's head.

Other accessories to the galvanic battery are a rheotome, which is an instrument for breaking and if need be, reversing the current, and the rheostat, an instrument for interposing resistances in the circuit and gradually changing the current strength. These things are always recommended by electro-therapeutists.

In using galvanic batteries, care must be taken of them to see that the fluids are not spilled, or too far evaporated, and connections are not destroyed. With ordinary use the zinc-carbon cells last several months, then fluid has to be renewed With care the zincs will last very much longer. Occasionally the elements should be taken out and washed in hot water.

In using the galvanic current, remember that it is a current of low tension and great quantity, and that its effects are much deeper and more potent than those of the faradic current. There is a marked difference between faradic and galvanic currents, despite the contrary opinion of Dr. H. C. Wood in his classical work on materia medica and therapeutics. If you do not believe it apply the two to the head, rapidly intermitting the galvanic current if you wish. The one hurts, but the other knocks you down. Galvanic currents have more than a simple mechanical and excito-reflex effect. They produce profounder changes in tissue irritability, excite chemical action and induce other electrical currents, besides stimulating nerves, muscles and glands. Galvanism is especially valuable, as you know, in treating diseases of the internal viscera which it alone appears to reach effectively.

In using galvanism do not forget that the direction of current has probably nothing to do with physiological or therapeutical effects. It is the peculiar action of the poles, not the current direction that you are to utilize. Therefore, always use your large electrode upon some indifferent place, and apply the other electrode to the affected part, using the positive pole, with gradually increasing and decreasing cur-

PERMANENT OFFICE TABLE,

For Physicians' Offices, Colleges, Hospitals, &c.

*Edelmann now claims to make an absolute galvanometer measuring in milleamperes, which is spoken highly of. (R. Lewandowski, Electro-Technick, Wien, 1884.)

Gaiffe of Paris makes a galvanometer which measures in millimeters and is not much commended. (op. cit. and R. H. Pierson, Electrotherapie.)

rents, for sedative effects; the negative pole, or alternating poles, with interrupted currents for stimulant effects.

For deep-lying organs use two large electrodes. The little electrodes ordinarily furnished are often very nearly useless. Large electrodes, if needed, the polar method, frequent repetition of short or long seances, cautious use of current strength, these are the things you should bear in mind in using galvanic batteries.

Galvanism and faradism should be given from two to seven times a week. The seances should last if you wish to give tonic effects, fifteen to thirty minutes. When applied to special organs or viscera, three to eight minutes is long enough. In chronic cases you should continue treatment for six to eight weeks, then wait for a few weeks and beginning again.

Kairine.

By C. W. Tangeman, M. D., Cincinnati, Ohio.*

AMONG antipyretics quinine has ranked first since its introduction. A number of objections have been urged against it almost ever since. Some of them, such as its extreme bitterness, its high price and contraindications in many cases, have stimulated chemists and experimenters to find a substance which could be offered as a substitute for so valuable a remedy. A large number of compounds and new drugs with many cinchona preparations have been administered to patients, but none of them apparently have stood the test of time. The latest compound used for that purpose was discovered quite recently by Fisher, of Munich, and for brevity sake was called kairin (its chemical formula is $C_{10}H_{13}NO$). Fisher has experimented quite largely on animals with this drug, but Filhene has employed it very extensively on the human subject both in health and disease. Since then the subject has been thoroughly studied by Seifert, Drasche and others. If it can be shown that this new antipyretic is equally as good as quinine much has been gained. That it is an efficient drug under certain circumstances nobody will doubt who has ever observed its effects. Two preparations are at present in the market: the sulphate and hydrochlorate of kairine; the former is a crystalline substance of a yellowish-white color, its taste is very unpleasant, and is not much of an improvement on some of the older remedies.

The study of the physiological action of this drug on animals has not produced very satisfactory results. On man in health it does not have any tendency to depress the temperature below normal; the heart action is somewhat slowed, as is also the respiratory act. In disease its action is more marked. There is no condition in which kairine does not manifest its antithermic action if given in sufficiently large doses. This does not say that it is indicated in all febrile conditions, or that its administration can safely be recommended in all cases. The action of the kairine discovered by Fischer differs from that of the kairine that had been in use for a number of years already.

There seems to be a great variation of opinion as to the proper dose of this drug by the different experimenters, but this may be only apparent. I think we can explain this difference by carefully studying the physiological action of the drug. While its tendency is to reduce the temperature, in every febrile condition the state of the patient physically as well as pathologically must be taken into consideration. Its main field of efficiency will undoubtedly be found in diseases where neither the heart nor the lungs are primarily affected; but where the fever is a long-continued febrile condition we may expect more, since its action does not in the least influence or abort the natural course of the disease. The safest method to administer this drug is to begin with a small dose and watch the effect with the thermometer until we have arrived at the correct and safe dose for that individual case—a dose that will keep the temperature at a point almost normal. In this manner we are able to better guard against collapse, and at the same time avoid the objectionable symptom of chilliness that is experienced by patients when the temperature rises again after a large dose of kairin. Unpleasant after-effects are met with occasionally, but they are not dangerous to the patient, thus making the remedy one of the safest powerful antipyretics in our possession, if carefully watched. The adult dose generally varies from 0.3 to 1 and 2 grm., repeated every hour. The effect of a large dose is very rapid sometimes, 20 to 25 minutes being sufficient to cause a decline in temperature; but the effect passes off just as quickly. Therefore the frequent repetition of the dose becomes necessary. It may range from 12 to 15 grm. per day given in 18 to 20 doses.

The drug is best administered in capsules on account of its bitter taste. My experience with kairine has been limited, and in some respects differs with the results of other observers. Altogether I have used it in five cases.

The following history is taken from my case-book as recorded, and fully illustrates the efficiency of the new antipyretic:

December 28, 1883. James R., aged 28, common laborer, sent for me; found the patient in bed with a temperature of 39° C. He had been sick for three days already, with a pain in his side and a cough. These symptoms with the physical signs clearly indicated a lobar pneumonia. I concluded to try small doses of kairine given every two hours, since it was so highly recommended in cases of this class.

December 29, patient received 0.40 (gr. vj.) kairine every two hours; the temperature was taken at the same time.

At 8 A. M. temperature was 38.8° C. (101.84° F.)
At 10 A. M. temperature was 39.°.
At 12 M. temperature was 39.°.
At 2 P. M. temperature was 38.3°.
At 4 P. M. temperature was 40.0°.
At 6 P. M. temperature was 38.0°.
At 8 P. M. temperature was 38.6°.
At 10 P. M. temperature was 38.0°.
At 12 P. M. temperature was 38.2°.

December 30, 6 A. M. the temperature dropped to 37.5° (99.5° F.), and remained pretty much the same throughout the day. The physical signs of pneumonia were rapidly disappearing, and the patient expressed himself as feeling very comfortable.

December 31. Temperature has remained almost normal, with the general condition of the patient improved. In this case the drug was well tolerated,

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not the slightest objectionable symptom occurring, and the effects were all that could be asked for. The following, and second case that I treated with kairine, was not so pleasantly acted upon:

A. T., aged 38, harness maker, seemingly robust and hearty, sent for me in great haste. I found him in bed. He complained of pain in the side and some cough, had had quite a severe chill. An examination soon showed a pneumonia of the right side. The pulse was rapid and the temperature corresponding. On the second day, January 3rd, I began the administration of kairine 0.40 (gr. vi.) every two hours. The temperature was 39.5° (103.1° F.); pulse 135; and respirations 43 per minute.

At 12 M. temperature was 39.5°.
At 1 P. M. temperature was 39.5°.
At 3 P. M. temperature was 39.°.
At 5 P. M. temperature was 39.2°.
At 7 P. M. temperature was 39.°.
At 9 P. M. temperature was 38.5°.
At 11 P. M. temperature was 38.3°.

Third day. Kairine 0.30 (gr. jvss.) doses every two hours:

At 8 A. M. temperature was 38.5°.
At 10 A. M. temperature was 39.4°.
At 12 M. temperature was 39.°2.
At 2 P. M. temperature was 39.8°.
At 4 P. M. temperature was 38.0° (100.4° F.)
At 6 P. M. temperature was 38.0°.
At 8 P. M. temperature was 38.0°.
At 10 P. M. temperature was 38.0°.

Fourth day. Kairine every two hours in 0.30 doses:
At 10 A. M. temperature was 38.5°.
At 12 M. temperature was 39.0°.
At 2 P. M. temperature was 39.5°.
At 4 P. M. temperature was 38.5°.
At 6 P. M. temperature was 38.6°.
At 8 P. M. temperature was 38.3°.
At 12 P. M. temperature was 38.8°.

Fifth day. The patient absolutely refuses to take any more of the medicine, on account of the extreme nausea, that had been set up the day previous; he vomited only once. Chilliness was complained of only whenever there had been a decline in temperature, which was followed by a rapid rise, which made the patient feel quite uneasy. The temperature remained pretty stationary. From now on patient was put on small doses of quinine, and made a speedy recovery. It is a peculiar fact that when nausea is once excited by kairine, it cannot be controlled in any other way but by the discontinuance of the drug. In typhoid fever I had only one opportunity of testing the efficiency of the medicine:

Child, with a high temperature and all the other symptoms of the disease well marked. Gave small doses of kairine 0.1 (gr. jss.) to 0.2 (gr. iij.) every two hours, but before it had any effect on the temperature, collapse set in suddenly, without giving any warning, and the child died. I am very loath to concede the death of this child to the use of the kairine, since only three doses had been given.

Kairine does not have a cumulative effect like digitalis, but is rapidly eliminated from the system. I have observed that the best results have been obtained in the treatment of pneumonia whenever the subject is robust and strong, while in children and weakly patients the results are not so favorable; the subjective symptoms in these cases are, contrary to Filhene's statement, very unsatisfactory. In many instances the patients absolutely refuse to take the medicine any longer, on account of the bad taste and nausea that it produces. The drug seems to be largely eliminated by the kidneys; it can be found in the urine 30 to 35 minutes after administration. Whenever there is a marked decline of temperature there is profuse perspiration. The drug may become quite valuable in diseases of the kidney, or in cases where a reduction of temperature and an elimination of poisonous material from the blood is desirable.

In rheumatism it has been given with excellent results. The action of kairine subsides very rapidly, therefore frequent doses are necessary to maintain a permanent effect; the thermometer is our guide, which must be used frequently; upon the slightest chilliness a half dose should be administered. Absolute laws governing the dose and action of kairine in all cases cannot be laid down. In feeble and decrepid individuals it must be given with considerable care, since it may, when given in large doses, suddenly produce collapse. Another objection to the drug is its very high price; though it has already been reduced, it is still beyond the reach of many individuals. Observers in this country do not report very favorably on this drug, but our knowledge is too limited to say anything definite, especially contradictory to the conclusions of Filhene, who has made this subject a special study for a few years. All that we can say at present is that it is a powerful remedy, the administration and physiological action of which must be studied more carefully at the bedside before any definite opinion can be passed on the subject.

Jequirity (Abrus Precatorius.)

By C. W. Tangeman, M. D., Cincinnati, Ohio.*

THE medical press of to-day is filled with reports of cases in which the above drug has been employed. Let us compare the various communicated results, in order to judge, if possible, the opinions of the different writers. From the cases reported the indications are that the history of the introduction of jequirity as a therapeutic agent will not differ materially from that of other new and valuable drugs that have been added to the pharmacopœia, nor have we a right to anticipate it. It always seems strange that no two observers equally well qualified will submit the same report in experimental therapeutics, though the case under observation be the same. Concerning the physiological action of jequirity comparatively little has been done in this country. Some experimenters even doubt the efficiency of this drug; it cannot set up any reaction whatever when applied to the conjunctiva in the form of an infusion. The reports are not to be doubted nor questioned, therefore our aim must be to find the reason why the drug remained inactive. The difference cannot be in a mistake in preparing it, since I have made and used it in every possible manner, even after the beans had macerated only for 15 minutes; and with all this I have yet to see an instance where I failed to cause a violent reaction by a single application of the infusion to the conjunctiva. It may require some time before

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all the probabilities and possibilities of a question of this kind can be satisfactorily settled. A discussion of the different reasons why failures may have occurred might be drawn out quite lengthy. It has been pretty conclusively proven that the infusion of this drug has but little action on other tissues save the mucous membrane. In many instances of these old chronic cases the conjunctiva has been entirely destroyed and replaced by cicatricial tissue. Can we then reasonably expect any effect from a drug that only acts on mucous surfaces, when there is nothing for it to act upon? But the case is recorded as a failure on account of the inertness of the drug. On the other hand, we must not forget to investigate the reported failures, and see if the drug was cast aside because it did not set up a purulent ophthalmia or if it did not produce a reaction at all. The first paper that appeared on this subject by De Wecker, of Paris, set up a fallacious theory by claiming that a purulent inflammation was always the result of the use of jequirity, and that a purulent condition was absolutely necessary for the cure of granulations. If this were true we would be compelled to acknowledge that the infusion is inert. The theory that purulency is required need not be discussed, since the pathogeny of trachoma and the physiological action of jequirity are known. I have treated a large number of cases both in public and private practice, and have yet to see a single case in which jequirity set up a genuine purulent ophthalmia. Nor is this necessary; it contains within itself the antidote to trachoma, which, if it could be brought to bear properly on the trachomatous process might relieve it without even setting up an active inflammation. After the introduction of abrus precatorius, Dr. W. W. Seely suggested that a purulent inflammation is not required, which fact has been confirmed and verified so often that it becomes an undeniable fact. The degree of inflammation and the rapidity with which granulations disappear is not proportional at all. The only effect that we may expect from it is that it stimulates the absorbents to more rapidly remove the bodies when they are ready to disappear. I have frequently seen granulations disappearing and the lids remain perfectly smooth without exciting even a subacute inflammation, by an application three or four times daily of an infusion of common garden peas, which acts on the same principle. The idea that a great degree of inflammation is required is a mistaken one. This seems to be the only explanation that can be offered why in so many instances failures have been published. The locality where the seeds have grown cannot cause a difference in action, since this remedy has been employed by the natives of all the countries where the plant is indigenous; and from reports that great caution is to be used in its application we can judge that it is not an inert substance. I have now under investigation jequirity seeds from India, Central America, and Brazil, (South America) and their action is precisely the same in every respect. I speak positively on this subject in this connection, since I have used it so often and under so many different circumstances. I am just as confident of a result when employing an infusion of jequirity as I would be when instilling atropia into the eye to dilate the pupil. Occasionally a case is met with that does not respond to the action of atropia on account of the pupil being bound down in other reasons, yet it has its place in therapeutics from which it will never be dislodged. Jequirity is, and undoubtedly always will be, a good remedy, in the hands of individuals who know how to use it. I will briefly give the history of a few cases of granulations. It has been claimed that in acute trachoma jequirity is contra-indicated; this statement can be disproved just as often as cases can be brought for illustration, as the following will go to show: Bessie F., aged nine, well nourished, etc., made application at the clinic for the relief of sore eyes. Examination showed the presence of an acute trachomatous process. The eyelids of both eyes were thickened, the ocular conjunctiva was congested, lachrymation and pain were prominent symptoms. The palpebral conjunctiva was studded thickly with granulations of such size that they could have been snipped off with a scissors. Here now was a severe and acute case, which might act as a test for the efficiency of the drug. Dec. 28th. An application of a strong infusion was made to the conjunctiva of both eyes, by means of a pledget of cotton wrapped on a probe. The following morning the patient returned; the eyelids were slightly œdematous and of a dusky red color, the conjunctiva was thickened until it looked like a velvety mass. The cornea did not participate in the inflammation but remained perfectly clear; there was no photophobia, but a slight discharge annoyed the patient, which was of a thin, watery character with some small flakes in it. The palpebral conjunctiva was covered with a membrane of a croupous nature, but it was so loose that it could easily be brushed away. No farther treatment was instituted but the artificial inflammation was permitted to run its course, and the patient was kept under observation. The catarrhal portion of the chain of symptoms disappeared in two days, and in the course of twelve to fifteen days scarcely a trace of inflammation could be noticed. The appearance of the conjunctiva during this period was the same as if fifteen to twenty applications had been made. At first there was a great thickening, but it did not have a tendency to hide the granulations as has been maintained by some very prominent authority; on the contrary they were as prominent as ever, and when the swelling began to subside the trachomatous processes gradually dwindled away, and by the time that the inflammatory symptoms had left entirely, the lids were smooth and have remained so up to the time of writing. Swelling of the conjunctiva does not hide granulations. The above is the history of an acute case, the result was perfect in every regard, and from the history given can any one see why jequirity is contraindicated in acute cases* as Kolloch of "Will's" eye hospital reports. I could report a large number of similar cases, but it would only be a repetition and a waste of time. In cases where there is no apparent reaction from this infusion I do not hesitate to say if the applications are continued for some time they will cause a disappearance of pannus and relieve the reddened and irritated appearance of old chronic cases; even the infusion of peas has this effect though its action is much milder. The use of this remedy and the method of its application in different cases requires careful observation to obtain good results, and the sooner we disabuse our minds of the theory that it is necessary to set up a purulent inflammation, or even a violent reaction, to

* Medical News, Dec. 13, 1883.

cure granulations, the sooner we will be able to treat this class of cases more successfully. As has been stated above, trachoma is of a mycotic nature and the jequirity infusion possesses the property to sterilize the field of their existence, and thereby brings about a cure, and not by producing a violent reaction. This symptom when present is objectionable instead desirable.

Hyposulphite of Soda in Diphtheria and other Zymotic Diseases.

By Elisha Chenery, M. D., Boston, Mass.

On page 495, of vol. for 1883 (Dec. No.), is an article on "Hyposulphite of Soda," by Dr. D. P. Duncan, of Waynesboro, Ga., which speaks well of the salt as a therapeutic agent. I can add more. In the year 1876 (Boston Medical and Surgical Journal,) I published an account of an extensive use of it in diphtheria under the head "Diphtheria Successfully Treated." That article was extensively referred to in the west, but was so horridly muddled as to completely thwart the desired object.

I began the use of the hyposulphite of soda twenty years ago without knowing that it had ever been used as a medicine before. I had studied diphtheria very sharply, for a destructive outbreak of it was raging around me, and myself and whole family had it, after which I came to live in a place where two years before it had literally slaughtered the people, and was at the time raging in adjoining neighborhoods accessible to me. The failure of physicians on all hands to conquer the disease led me to distrust the vaunted means till I came across the suggestion of Prof. Polli, of Italy, that diphtheria was a fermentative disease and that the sulphites were powerful antiferments. This seemed reasonable, though the bi-sulphites were the ones which he suggested. My extremity had come in a case and the bi-sulphite of soda could not be procured. I was compelled to resort to the hyposulphite which then so well served me that I have continued to use it till I have given it in hundreds of cases.

Not only is the hyposulphite of soda, in my opinion, the best remedy yet brought to light for the treatment of diphtheria, when early and freely used, but it is equally serviceable in other infectious diseases. I, from considerable experience, believe it will prevent scarlet fever if given as a prophylactic, and greatly modify the cases after they occur, if early and vigorously employed. There is no trouble in giving it to children in one to four teaspoonful doses of half an ounce dissolved in eight ounces of simple syrup and water, equal parts. In an experience with it in a family of nine children with typhoid fever just getting out from under care, I have found that those who took it considerably at first, did better than those who did not take it.

My student comes home from the dissecting-room and washes his hands in a strong solution of it to get rid of the odor. Indeed it is said to be the only thing not harmful which will destroy the odor of suppurating cancer. It is, so far as I know, the best thing to cut down fermentation of the stomach and bowels. For this I have used it hundreds of times. If fermentation of the food begin the process will go on till the "whole lump is leavened," when a griping diarrhœa will remove the ferment, unless new food is taken to keep the fermentation up. In such cases the ferment may be at once killed by two or three drachms of the hyposulphite in sugar or glycerine and water. Thus the sickness is prevented. Last summer I had just come in from a child in collapse from cholera-infantum, when I was called to another child, four months old, so blue and sunken that the mother could not bear the sight of it, and had fled from the house. The diapers were literally loaded with the choleraic discharges, and the child fast sinking into collapse and apparently would shortly be beyond hope. I had just been reading that our old remedies for this disease were failures—a fact I had often proved. A venture had to be made. I instantly prepared a solution of the hyposulphite, sweetened it with glycerine and began to spoon it down the child's neck. After a few minutes, finding it did not come up I added another preparation with a drop of laudanum. A more marvelous change was never witnessed. Water and slight stimulants and afterward food were given. Another motion from the bowels never occurred till four days when a laxative was administered. That child, now nine months old, has just gone through typhoid fever with his eight brothers and sisters. A few days later I had a similar case of cholera-infantum, though not as extreme, and I gave the hyposulphite at first and then the chalk or bismuth mixture with a little laudanum. The result was decided. With Dr. Duncan, I too, "hope others may be encouraged to use this salt."

One word further. Why cannot we have a pure preparation of this valuable remedy? I have never seen a sample that did not look impure, or which when dissolved and held up to the light did not show considerable impurity in the shape of lint or something else. I should like to purchase a pure article for once. I have had to use what I could get.

Burdock Seed in Epilepsy.

By W. H. Bentley, M. D., LL. D., Cold Spring, Woodstock P. O., Ky.

During the summer and autumn of 1883 I was much annoyed by the presence of a cutaneous disease which prevailed throughout the bounds of my acquaintance. It appeared to be epidemic, and, in some instances, it proved to be contagious, likewise. At first I gave it little attention, but it proved not only rebellious to treatment, but, in many cases, absolutely uncontrollable.

I resorted to every species of treatment, both constitutionally and locally, at my command, and often without any, even the least, advantage.

At length I secured a quantity of chaulmoogra oil, some oil pongamia glabra, and some fluid extract burdock seed.

I used the oils locally in many cases with complete success. They succeeded; in fact, in all the cases in which I used them, except one, they proved to be all that was required. This was a young man, 19 years of age, well developed and weighing 160 pounds. He was at the time, and had been for ten years last past, a confirmed epileptic. Most of the time he had been my patient, and I had consulted in his case and followed from time to time the prescriptions of 12 eminent

American physicians and one Frenchman—all professors in colleges and medical authors. Nothing appeared to benefit him. He grew worse, it seemed, constantly.

Well, this patient contracted this epidemic psoriasis, and neither of the above-named oils seemed of the least benefit to him, though both had been liberally used. At length I gave him a pound of the fluid extract burdock seeds to be used in drachm doses, three times a day, before meals, and an ointment composed one-third oil chaulmoogra and two parts cosmoline to be applied thoroughly every night on retiring to bed.

His cutaneous affection yielded tardily, but his epilepsy improved, so that by the time the medicine gave out he rarely had a paroxysm, and when they did occur, they were very light and inconsiderable. He is now using his second pound of the drug.

His digestion was wretchedly bad for some years and seemed to yield to no treatment. Under the use of the burdock it at once improved, and is, at this writing, tolerably good.

I report this case thus early that the drug may be tested by other and abler minds in similar cases, and especially in cases dependent on indigestion, of a nervous character, as this certainly was.

I hope, at an early day, to be able to lay before your readers some account of the cutaneous epidemic above alluded to, and a summary of the cases treated by the above named oils.

Jequirity in a Case of Trachoma.

By J. R. Kinney, M. D., Minneapolis, Minn.

GEORGE C., æt. 18, came under my treatment in April, 1883. He had been under the treatment of several physicians during the preceding three years. When I first examined him, his right eye was slightly trachomatous. The left was intensely so, and the cornea was entirely obscured by a dense pannus that involved its whole extent. The conjunctiva of the lower lid was cicatrized by former caustic applications, and the palpebral slit was contracted to quite an extent. There was also slight entropion. During the seven months that he was under my treatment, I passed the rounds of everything suggested by the experience of others, as well as my own, including canthoplasty, but the case was apparently as far from a happy result as when I first saw it. When my eye rested upon the experience with jequirity of Dr. E. B. Richardson, as given in the November number of the Therapeutic Gazette, I sent for a package at once, and prepared a solution after the formula given in that article. During the first four days it seemed to produce no effect whatever. I prepared another solution of double the strength of the former. The effect of this was prompt. The eyes passed through the different stages as described in that article, until the sixth day, when I discontinued its use. Suffice it to say that at the end of three weeks, the trachoma had vanished, leaving the lids perfectly smooth. The pannus had also disappeared with the exception of only a slight trace upon the extreme upper border of the cornea. The eyes have continued to improve up to the present date. There is now not a trace of either trachoma or pannus. The patient can read coarse print with both eyes, whereas, at first he was totally blind in his right eye. In fact, he is cured and happy, and I am grateful.

Reports on New Remedies.

From Private Practice.

Cases Showing the Utility of Black Haw, in the Treatment of Cramp, Arising from Uterine Disorder.

By John Fondey, M. D., Philadelphia, Pa.

JAN. 16th 1884, I was called to see Mrs. F., æt. 41, who was suffering from severe headache, extending over the whole head, nausea, heavy chills, attended by severe painful spasms of the muscles of the dorsal and lumbar regions, and of the arms and legs, from the knee downward. The chills were so heavy as to shake the bed violently; she was unconscious during a part of the paroxysm. For eight weeks she had suffered from diarrhœa, the discharges loose, white, and from sixteen to twenty a day in number, for the relief of which she had had no medical advice. Patient has worked very hard during her life, and is now considerably reduced in flesh. Eighteen years ago, in Germany, she had an attack of typhoid fever which lasted six weeks. Since that time she has suffered from headache, affecting chiefly the top of the head, accompanied by a sensation of coldness, instead of heat, which attacks occurred about once every week. During her monthly periods she suffers at times from dizziness. Since last spring her monthlies have been irregular, sometimes occurring every two or three weeks; color always good, sufficiently free, and lasting a week. She had long suffered from sensations of soreness in the small of the back, between the shoulders, and for some inches below the clavicles of both sides; considerable palpitation, and hard, heavy beating of the heart also. As she had taken a severe cold, I administered hot stimulating teas, and applied heat to the feet, from which she soon became warm, and the paroxysm ceased. I then prescribed minute doses of aconite and belladonna in a tincture, every hour, along with small, alterative doses of podophyllin, every two hours. The next day (Jan. 17th), she had only four discharges from the bowels; these were yellow; the next day but one, and this more bilious; the discharge in a few days became more solid in consistence. The remedies were continued at longer intervals during this time. Her menses came on the next day after my visit. On the 21st of Jan. I was sent for, about 11 P. M., to visit her. She was improving in the morning, but had got out of bed during the day, remaining up for about half an hour, and must have caught cold, for her menstrual flow had greatly lessened in quantity, and changed in color. I found her suffering as at first, from nausea, severe cramps and chills, with intense headache, which involved the whole head. Believing that the womb had much to do with this condition of things, I gave her 30 drops of black haw, fld. ext., in water. The effect was magical. In a few minutes the nausea, cramps and chills ceased, and the headache was relieved. The black haw was given daily after this, three times a day, for three or four days, 10 drops at a dose, in combination with the remedies already mentioned.

In another case of a young lady age about 22, who had suffered a great deal from distress in the lumbar and sacral regions, and fluor albus at some of her

monthly periods, experiencing severe cramps in the stomach also. During one of these attacks, which was very severe, I administered 30 drops of fld. extract of black haw in a little water. For about one minute the pain seemed to be aggravated, and then it ceased in a moment, and she has had no return of the paroxysms, although about three months have elapsed.

Report of Five Cases of Syphilis Treated With McDade's Formula, in the Marine Wards, Tonro Infirmary, New Orleans.

Service of P. Asst. Surgeon John Godfrey, M. H. S.

CASE 1. Virginia Gillett, negress, aged 39. Born in La. Under treatment for iritis (syphilitic) in Marine Hospital, N. Y. Discharged Sept 1st, 1883, improved. Admitted here Sept. 24, 1883. Eyes affected (same trouble), left more than right. Fingers blurred at fifteen inches. Denies syphilis, but the evidences are unmistakable. Atropia sulph. distilled in eye night and morning. McDade's mixt. 5 c. c. (3 j) t. i d.

Oct. 2. No improvement. Complains of increasing nocturnal pains. Mixture continued.

Oct. 8. No improvement. Dose increased to 7.50 c. c.

Oct. 13. Somewhat improved. Continued treatment.

Oct. 19. No improvement since last report.

Oct. 24. Complains of unbearable pain in both eyes. Treatment suspended. Placed on sat. sol. pot. iod., 5 gtt., t. i. d. Gradually increased.

Dec. 31. Discharged, improved.

Case 2. Harmon Kennedy, aged 27. Native of La. Admitted for treatment Sept. 26, 1883. Had primary syphilis in July; initial sores large and indurated. Secondary symptoms principally rheumatic. Osteocopic pains (quite severe) in elbows and ankles.

Sept. 30. McDade's mixture, 7.50 c. c. t. i. d.

Oct. 10. Increased dose to 10 c. c. (3 ij). No improvement.

Oct. 17. 15 c. c. No change.

Oct. 18. Syphilitic fever. No improvement. Medicine discontinued.

Case 3.—Adam Jones, æt. 25; born in Virginia. Admitted September 17, 1883. Had primary sore about four years ago, with bubo in left groin. Has syphilitic arthritis (both elbows). McDade's mixture 5 c. c., t. d.

Oct. 4. No improvement.

Oct. 12. 10 c. c., t. d.

Oct. 17. No improvement. Medicine stopped. Ordered pot. iod. half c. c. (gr. vijss) to begin.

Discharged December 3d, taking 2 c. c., t. d. Condition greatly improved.

Case 4.—William Lewis, æt. 22; native of Tennessee. Admitted November 7th. One large sore on penis; modified by caustics before being seen. Pustular syphilide from head to foot. Says eruption has been on him for one month. Statement doubted, as there are few evidences of receding pustules. McDade's mixture began November 14th. Five c. c. (3 j) every four hours.

Nov. 16. Ten c. c.

Nov. 17. Face clearing up. Treatment continued.

Nov. 20. Pustules over body tending to confluence in spots. Dusted with oxide zinc. Osteocopic pains. Sedative mixture at bedtime.

Nov. 21. Fifteen c. c. (3 iij), t. d.

Nov. 28. No improvement. Pains in limbs very great. Sores broken down, bleeding, sticking to clothing.

Nov. 29. Medicine stopped.

Dec. 9. Has been taking pot. iod. Deserted, slightly improved.

Case 5.—Frank Lorigan, æt. 26; native of Louisiana. Admitted November 20. Had syphilis two years ago, for which he has had treatment at various times. Herpetic eruptions over shoulder blades, and over one arm and forearm. Describes a watery bleb, which he says comes out now and then. Has diarrhœa occasionally, very bad, but with no pain. Ordered McDade's Mixture November 22d, 5 c. c., t. d.

Nov. 24. Dose increased to 10 c. c., t. d.

Nov. 29. No improvement discernible. Medicine discontinued, as supply was exhausted.

Phytolacca Decandra and Mint in Inflamed Mammæ.

By D. P. Duncan, M. D. Waynesboro, Ga.

IF YOU you wish to thoroughly disgust some of the more learned in our profession, you have only to mention the wonderful effects of some of the simplest remedies.

I came near offending a brother a few days since, by stating that mint leaves steeped and applied to the mammæ would at once arrest the secretion of milk, and that a most remarkable thing in connection with it, is that its action is strictly confined to the breast to which it is applied, checking the secretion in one and leaving the other to perform its natural function. He hooted at the very thought and denounced it as absurd. Nor did he cease to denounce it until I asserted most sacredly, that my observations sustained the truth of the statement.

The poke-root, fluid extract, taken internally and applied locally, I hold as a specific for inflamed breasts, if used prior to the suppurative stage. If administered early, it will in twelve hours begin to give relief, and in thirty-six hours all traces of inflammation will have subsided and disappeared.

The above are facts established in my practice, not in one or two coses, but in numbers of them. Strange to say, there are many of these simple, and easily-obtained remedies, which have escaped the more learned, who consider it undignified to be dealing in old women's remedies, as they see fit to call them. But my experience has taught me not to ignore the simplest agent in nature's exhaustless laboratory, in which everything has been created for some wise purpose by Him who created man. It is, therefore, of sufficient importance, from its origin, to make us pause ere we cast anything aside as worthless. Who is man, that he should criticize or treat with contempt any of the Master's handiwork?

So far as the application of remedies to the treatment of diseases goes, I am an eclectic. I believe it to be the sacred duty of the physician to relieve suffering and to forego the mortification of obtaining anything outside of his own "pathy" to accomplish this purpose.

Witch Hazel (Hamamelis Virg.) in Hæmorrhages.

By O. P. Langworthy, M. D., Clinton, La.

In your editorial in the January number of your to me, entertaining and instructive monthly, you ask for contributions of experience. I have been intending to make public mine in the use of the fluid extract of the witch hazel; and not only of the fluid extract, but of a tea of the freshly gathered limbs and roots, including of course the bark. In one case where all other medicines usually recommended failed, it succeeded. It was a case of hæmoptysis; the patient was losing strength perceptibly day by day. From the third ʒi dose of witch hazel improvement commenced, and kept up. Besides the case I report I have used the same article in quite a number and variety of hæmorrhages, and might, perhaps, almost call it a hæmostatic. It is pronounced by my patients as much more agreeable than ergot, and although by some authors pronounced "non officinal," I think ought to be officinal. [It is officinal in the 1880 U. S. P. Ed. Gazette.]

You may conclude, from my way of informing those who read your journal, of my experience, that I am with Dr. Records in continuing to hold on to the old system of prescribing; and although a permanent member of the American Medical Association, I expect to continue so to do, while I practice medicine.

Translations.

[All articles signed "T" are translated for The Therapeutic Gazette by C. W. Tangeman, M. D., Cincinnati.]

The Physiological Action of Muriate of Cocaine.

Amess has published an article on the physiological action of muriate of cocaine on animals, in d. Arch. f. de Physiol., vol. xxi, 1880. His observations were made at the Würzberg Pharmacological Institute, where he was assistant. His experiments on animals were of no practical value, therefore he concluded to make some observations on the human subject to determine the physiological action of this remedy. E. v. Bibra studied the physiological action of coca leaves upon himself, and according to his publications homœopathic doses are sufficient to quiet hunger, stimulate and increase the energies of an individual to such an extent that he can undergo hardships that could not be endured without the action or assistance of coca. B. chewed coca leaves while he subjected himself to violent exercise. The first effect was an unpleasant taste in the mouth with an increased salivary secretion, but there was no apparent effect on the nervous system. He began marching in the morning without a particle of food, and continued the whole day without exhaustion, and in the evening could partake of food as usual. B. does not say what part of the coca leaves possesses this quality, but he agrees with Gaedeke, Johnston, and Gorup that it is due to a narcotic principle similar to caffeine.

Dr. P. Mantegazza is the author of a work on coca leaves; in his classification he classes coca with narcotic alkaloidal beverages that have a powerful action on the heart and nerve centers, increase the intellectual faculties and diminish sensibility. The effect of coca is to increase the mental functions, and it has a very pleasant effect on the digestion. Coca chewing has a very peculiar effect on the nervous system, a sense of warmth passing through the whole system. Coca intoxication differs somewhat from spirituous intoxication; in the former condition there is a sense of increased intelligence, and a feeling as though the body was possessed of a new power formerly unknown to the individual. In America the alcohol habit is reported cured by the employment of coca. At the conclusion of Mantegazza's work he gives a resumé of the physiological action of coca, of which we will only quote one sentence, it being the most important to us at the present time. "When given in moderate doses, coca stimulates the nervous system to such a degree that an individual is more fitted to undergo great muscular exertions, without experiencing fatigue; it seems at the same time to fortify the body against disturbing influences from without."

Schildbach, who refers to the above observations, concludes with the remark, that if coca was nothing but a simple stimulant, and not as we think, a sort of a nutriment to the nervous system direct, it is a more desirable remedy than the ordinary stimulants, since it is perfectly harmless, and besides, very agreeable to the taste. In my observations and experiments, I find that the active principles of the leaves of cocaine is the remedy which possesses the wonderful properties so concisely dercribed by a number of authors. It contains the qualities to enable individuals, even when small doses are given, to endure long marches, to suffer hunger and cold to such an extent as would not be possible without the use of it. Therefore we must consider muriate of cocain a direct nourishment for the nervous system. These observations cannot, I believe, be made on animals that are confined in cages: they cannot be subjected to exhausting marches or violent muscular exercise. I had an opportunity of making observations with cocain on troops that were being drilled. The subjects were exposed to the inclemencies of the weather both hot and dry, and received doses of muriate of cocaine without their knowledge, thereby giving me an opportunity to make objective observations that were not influenced in any respect. I employed the remedy in small doses, and will briefly give my results. The drug was obtained from Merck of Darmstadt. I made a number of solutions, ranging from 0.01, 0.05, 0.1, 0.5 gr. to 10. gr. of water.

Case 1. T. fell down exhausted during the second day of the march; the temperature was very high. I administered a tablespoonful of water with 20 gtt. of the cocaine solution (0.5:10); at the expiration of a few minutes I gave him 5 gtt. more, when by his own free will he arose, took up his knapsack and walked to H., a distance of several kilometers during the hottest part of the day. When being asked how he felt his answer was that he felt stronger and brighter than in the morning before starting out. I had not noticed any bad effects, nor was any complaint made of the taste of the drug. T. had the reputation of being an old and tried soldier.

The second case is one in which R. was severely injured about the face during a night attack. The use of ice was indicated, but that article was not to be obtained, nor did I have any anodynes conveniently at hand. I could not determine definitely the nature of the injury by the light of the fire. R. had suffered the loss of a considerable amount of

blood, but in spite of his apathy complained very much of pain. I administered some cocaine, when the pain rapidly disappeared. He soon fell asleep, but was very restless; but the complaints of pain soon ceased. I retired at 1:30 A. M., but on account of the immense number of bedbugs, could not sleep. Consequently I arose at 3 o'clock in the morning and returned to camp, and can now give my own history as the third case. The morning was cool and in consequence of the hardships of the previous day and the loss of sleep I felt worn out and fatigued. I was quite chilly, my head pained, and the prospects of new hardships for the coming day did not have a tendency to cheer me up very much. At the bivouac I drank some hot coffee to which I added cocaine, and during the coming day I neither experienced hunger or thirst, nor did I feel sleepy. Though I did not partake of anything to eat until in the afternoon I did not suffer or unpleasantly notice the privations. What must be mentioned in this connection is that I had always lived regularly and was not accustomed to such hardships.

Case 3. K. had suffered very much from diarrhœa and had been given tincture of opium with cocaine. At my suggestion to seat himself on one of the baggage wagons he declined with the remark that this attack did not effect him as formerly; he felt quite well and strong, and he preferred to remain with his company.

Case 4. My servant, V., had gone to J., where he with some friends before my arrival had partaken of large quantities of cold water. H. offered me some of the water later on, but it had a peculiar taste and smell, so that I refused to drink any of it. A little later my servant complained of pains in the abdomen, headache and dizziness, with a good deal of nausea. Opium with spirits vini gallici were administered, but no effect could be obtained. Sleep was much disturbed and his condition in the morning was worse than the night previous. When he drank his coffee I gave him a dose of cocaine, 0.01, which was repeated in the course of two hours. V. marched all night in spite of hard roads caused by a continuous rain the night before. The following day he felt much better.

Aside from this number of cases I employed cocaine often in exhaustion due to diarrhœa, which occurred quite frequently, with the very best results.

I do not claim much exactness for the above records, nor did I pay much attention to dosage, but the physiological action of the drug was clearly demonstrated, and its value under the same circumstances where I employed it cannot be over-estimated. —Theodore Aschenbrandt, Würzburg, in *Deutsche Medicinische Wochenschrift.*

Naphthol in the Treatment of Scabies.

Dr. Samuel Rona treated 21 cases of scabies exclusively with naphthol ointment and reports his observations as follows: As the patient makes application at the hospital he is stripped of his clothing, and the places where the disease is most frequently found, covered with naphthol ointment, and later on the patient is completely covered with the ointment (save the head and neck). The inunction in the above cases was made in the evening. In the morning the patient is bathed and the reddened surface covered with rice powder. After the first application the patients are usually discharged as cured. Only the first five of the cases were retained for eight or ten days for the purpose of observation. The intense itching caused by the disease persisted for two to three days frequently, but it was attributed to the eczema. Rona endorses the views of Kaposi, namely, that naphthol is more efficient than all the other remedies combined. Naphthalin, recently recommended by Fürbringer, does not excel naphthol. When speaking of one application as being sufficient to relieve scabies, it must be born in mind, that the application must be a most thorough one, otherwise it may necessitate two or three.

Naphthol may be safely applied in ten- to fifteen-per-cent ointment. Rona has used it in 100 cases without observing a single toxic or unpleasant symptom. If given in a concentrated form it causes symptoms of irritation and eczema. In chronic eczema the strength of the ointment should not exceed two- to three-per-cent. Great care is required to make a correct diagnosis, since, not unfrequently, it is quite difficult to differentiate between scabies and chronic eczema. Rona usually prescribes it in the following formula:

℞ Naphtholi puræ 15.0.
Ung. simpl. 100.0.
Sap. vir. 50.
Cretæ pulver. 5.0.

—*Pest. Med. Chir. Presse.* T.

Croton Oil.—Its Active Principles.

The pure expressed croton oil can be separated into two parts by means of alcohol. The part that is soluble in alcohol contains the principle that acts as an irritant to the alimentary canal, while the insoluble portion does not contain any active principles at all. The general opinion of the action of croton oil has been that the cathartic action of this oil has been attributed to the irritating properties of the oil. Quite recently Dr. Meek has made a series of experiments proving that the active principle of the oil is found in the portion of the oil which is insoluble in alcohol. The experiments consisted in washing the oil quite a number of times with alcohol in order to dissolve and separate all the soluble particles, and make the insoluble part into pills. The result was when a small dose was administered only a laxative effect was produced, but a larger dose produced only a corrrespondingly greater effect but without causing any unpleasant symptoms. The author completed his experiments by giving equally large doses of the two preparations, under circumstances as nearly alike as possible. With the soluble preparation he obtained no laxative effects at all, but a considerable amount of irritation of the alimentary canal and a great deal of nausea, while the other preparation produced catharsis without any unpleasant effect whatever. According to the observations of the author it may become possible that croton oil can be made a sure, efficient and pleasant cathartic. There is no doubt that croton oil can be separated into two parts, one containing the irritating and the other the purgative principle. It has also been conclusively proven that the irritating properties of croton oil soluble in alcohol are not due to a free acid but is made up of non-volatile fatty acids.—*Pharm. Post.* T.

Aconite and Aconitine.

A large number of experimental observations by J. V. Laborde and H. Duquesnel with aconitine, cause them to arrive at the following conclusions:

The efficiency of aconite is certainly dependent on the crystalline substance aconitine. Every well-characterized species of aconite possesses its own crystalline aconitine, and possibly, not unlike aconitum napellus, it contains an amorphous insoluble aconitin, and an amorphous soluble alkaloid (napelline). Crystallized aconitine is insoluble in glycerine, and almost insolubte in water, but can easily be dissolved in alcohol. The amorphous aconitine differs very much from napelline in its physiological action. Sensibility and reflex irritability can be destroved by aconitine. The rhythm of the heart contractions can be altered to such an extent as to cause an ataxia of the heart beat and set up a kind tetanization. Respiration suffers in frequency and rhythm. Marked changes take place in the lungs after poisoning with aconitine. Death from this cause is due to asphyxia rather than paralysis of the heart, which has been proven by an instance where the effect of a lethal dose of aconite was antidoted by keeping up artificial respiration. Aconitine causes vomiting and diarrhœa; even when injected subcutaneously the mucous membrane of the alimentary canal gives off the drug again; the secretion from the salivary glands is increased. The poison can be found in the liver, this organ must be carefully examined in criminal cases. The therapeutic indications of aconite are neuralgia and muscular rheumatism.—From *Deut. Med. Zeit.* T.

Quebracho Aspidospermine.

Dr. Don Juan Mauriel Mariasiy Larrion, physician to the hospital de la Princesse de Madrid, has employed this medicament in a number of diseases of the respiratory and circulatory organs. The quebracho is a pretty tree and attains a considerable height. The part used is the bark. Six alkaloids have been obtained from the bark. This drug is administered in the form of a syrup, a hydro-alcoholic tincture and an extract, in doses of 50 centigrammes to four grams of the two latter preparations. The following conclusions are a short resumé of the author's observations:

1. The principle action of this drug is to cause a diminution of the number of pulse beats per minute, and lessen the frequency of the respiratory act.

2. Its principle and direct action is on the circulatory center, giving tone and regularity to the contractions, with an intermediate effect on the nervous system.

3. This action is rapid and is manifested almost immediately after the administration of the medicament.

4. It is not employed with such good effects in nervous dyspnœa.

5. It is possible to produce the same effects in diseases of the thoracic organs when they are due to malaria.

6. Its administration in the doses indicated is not dangerous, and its continuation will not have a bad effect on other organs.—From *Journal de Therapeutique.* T.

The Preparation and Use of Powdered Bullock's Blood.

De Guerder has employed the powdered bullock's blood as a substitute for meat powder. The following is, briefly, what he arrives at after administering it in 51 cases: Out of 51 cases 44 tolerated its use for several weeks without the slightest complaint. The taste of the powder which not exactly unpleasant, is sometimes liable to cause a little nausea, but this can be remedied by combining with it an aromatic powder. The dosage requires some care. If the dose is too large the patient will not tolerate it. Dr. G. generally prescribes seven to eight grms. three times daily, for children, and twenty to twenty-five grms. for adults. This quantity is generally tolerated by all patients, and is usually sufficient to rapidly reconstruct the enfeebled organism. Seventy to 75 grms. of this powder is equal to 500 grm. of fresh blood. If it is not readily digested a little pepsin may be added. The preparation of the powder requires great care. Only fresh blood is taken, freed of its fibrine and boiled for four or five hours over a water bath, when it is allowed to dry in a current of air at a temperature of 40° to 45°C. The larger lumps are pulverized in a mortar and transferred to an oven where it is perfectly dried to insure its keeping. It is best administered in a cold vehicle, as water, wine, milk, or black coffee, just before eating. When administering it to small children it may be mixed with syrup and put in a nursing bottle.—From *Bull. de Ther. Pharm.* T.

Bromine in Diphtheria.

The discouraging results in the treatment of diphtheria have caused many to put forth every effort to discover something that will control this terrible disease. A Hiller recommends the use of bromine as an inhalation, and as an application directly to the diseased surface by means of a brush. There is no method of treatment that has yielded better results.

Aside from the parasiticidal properties of bromine, it also possesses the power to dissolve croupous and diphtheritic membranes. For the purpose of local application stronger solutions can be used than for inhalation:

℞ Brom. puri.
Kali bromati ana 0.5 to 1.0.
Aqua destill 200.00.

S. Apply every two to three hours.

The author combines inhalations with the local treatment from the beginning, in the following strength:

℞ Brom. puri.
Kali bromati ana 0.6.
Aquæ destill. 300.0.

S. One-half to one hour.

In case the patient tolerates this plan of treatment well and it seems to be necessary, the strength may be increased. The method of inhalation is simple, using a conical shaped glass cylinder; a small sponge saturated with the solution is placed in the larger extremity, while the patient takes the small end in his mouth and breathes in and out. The warmth of the expired air causes a vaporization of the bromine. T.

Adonis Vernalis.

A series of experiments have been made at Prof. Botkin's clinic with adonis vernalis. It was soon determined that certain kinds of ascites yielded rapidly to the administration of this drug. Whenever the disturbance is due to a disturbance in the compensation of the heart's action, the heart-beat becomes stronger, the dimensions of the heart smaller, and the pre-systolic and systolic murmurs of stenosis of the aorta are more marked during the course of this drug. The heart rhythm is more regular and slower, which causes a slowing of the pulse. The quantity of urine voided daily is much increased, ranging from 300 to 400 CC. in 24 hours prior to the use of adonis vernalis, to 2.000 to 3.000 cubic centimeters. Œdema and cyanosis gradually disappear; dyspnœa is not so marked and the respiratory acts are more regular. The patient feels much relieved from the first day after its employment. B. generally administers it in the following manner:

℞ Infus adonid. vernal 4.0 ad 200.0.
Ol. menth. piper gtt. ij,
Syr. cort. aur. 10.0.

M. S. One teaspoonful every two hours.—*Deutsches Archiv f. Klin. Medicinc.* T.

Paraldehyd and its Action.

In an essay on the above subject Guhl laid down his views and gave a resumé of the views and observations of other experimenters. He gave the chemical composition and the properties of the drug. According to G. paraldehyd acts in many cases not only as a hypnotic, but also as a narcotic, and can be recommended in a number of diseases. The dose generally given at one time varies and ranges from 1.5 to 5 grm. It is best administered in tr. aurantii cort. simplex, which serves the double purpose of hiding the taste and as a solvent.—From *Pharmaceut. Centralhalle.* T.

Phosphate of Codein.

Merck, of Darmstadt, has succeeded in combining the sulphate of codein with phosphorus, at the suggestion of Prof. Hegar. The preparation is soluble in four parts of water, and contains 70 parts of codein to the 100 parts of the compound. It crystallizes in small white four-sided crystals. It has a very bitter taste. It has a milder action than morphine. For the purpose of subcutaneous injections it is very suitable on account of its great solubility, but the dose must be double that of morphine sulphate. Irritation at the point of puncture through the skin occurs very seldom.—*Deut. Med. Zeitung.* T.

Correspondence.

Central American Correspondence—Cassia Fistula, Cahinca, Contrayerva.

Since my last I have been, owing to very busy times, unable to write as usual, but hope from this on to make up for dilatoriness. We have visited several ports, having gone as far south as Panama, but of all the places except this I will defer writing till next mail. La Union is the largest seaport town in San Salvador. It is situated on the north side of the bay of Fonseca, and is perfectly free from all gales, the waters of the bay being dotted with numerous islands. The town lays at the base of a volcano, extinct for over 200 years, but which has, it is said, and observations prove, grown over 200 feet during the past four years. The town is, in the business portion, compactly built, but scattered in that part devoted to residences. The streets, so called, during the dry season are dusty and dry, and during the wet season become huge beds of mud with stagnant pools of foul-smelling, miasmatic accumulations, and breed fever and other diseases. The houses used for dwellings are built of small branches of trees covered with adobe and mud, and serve at night for buzzards to roost upon. There is no attempt made at drainage, and as human excrements can be seen in almost every street and lane, and in the woods, the stench can be better imagined than described. The soil is of a porous nature and the effects of the above habit can be foreseen.

The population of La Union is about 2500 and are an admixture of Mexican, Spanish, Indian, Negro, and European, not one but all kinds, the five bloods intermingled. They are of a sallow complexion, indolent and not easily fatigued. Without energy they easily become the victims of disease, and at 35 are prematurely aged. To excite them and infuse a small iota of life in them, those of the population having half American or Spanish blood, inaugurate cocking-mains during the week and on Sundays have a grand fight, or long drunk on mescal or pulque. The women, who seem to be and act as the models of modesty, and perfect paragons of virtue during the day, after night-fall display the most vulgar immodesty and openly solicit prostitution from one and all comers.

The climate of this place is very fair, ranging from 78 to 86 during the winter months and dry season, and from 74 to 96 for the balance of the year. During our previous stay here the highest temperature was 89 Fah. during the day, and 74 the lowest; the latter being at night. From all sources I find that as a general rule the nights are cool the whole year round, a gentle breeze coming over the hills. From its landlocked position the heat is more keenly felt at La Union than elsewhere, which fact has caused it to be called the "hothouse of the coast." Food is very plentiful as regards beef and fruit. Vegetables are very, very rare, a potato or onion being like "angels' visits," few and far between. Yams are scarce and dear.

The water is procured from shallow wells, and is of a brackish quality and very scarce. Some rain water is caught during the wet season. The people are not great water drinkers, preferring their rations of *aqua diente* to anything else. The water in the wells is rendered poorer by the fact that the tide rises and falls 17 feet, twice in 24 hours, and the filthiness of the town drains through the mud and into the cisterns. I might here add that the stench when the tide is out is something unbearable.

The prevailing diseases are those of a malarial nature. Intermittent, remittent, typhoid and yellow fevers, besides the crazy or torto fever, the latter being a species or variety of acute cerebro-spinal meningitis. From the innate filthiness of the people occasional epidemics of violence occur. Phthisis

and pulmonary troubles are very frequent, and it is noted as a fact that the fatal cases are out of all proportion to the ratio of population.

During my stay here, I noted the fact that at this place and at Amapala, Honduras (of which more in my next) that the natives made use of the following drugs, so little known to us, viz.: lippia Mexicana, cassia fistula, and cahinca.

The cassia fistula, of which I have preserved some fine specimens, is described on page 362 *et sequitur* National Dispensatory, 2d edition, 1879.

Its medicinal action is, however, very different from that described in that work. Instead of being a mild laxative, it is noted here and elsewhere on the coast, as being a drastic griping purgative. From personal experiments, and from others on board who have partaken of it, the dose given in the N. D., viz., (gm 4 to 8) two drachms, even mixed with manna and tamarinds, causes nausea and severe intestinal derangement. Bloody stools mixed with mucus are the rule, rather than the exception. The natives use about 10 to 15 gr. of the pulp, largely diluted with water in which one or two bananas have been crushed. It is occasionally used as a gargle for relaxed sore throat.

Of the cahinca, (described on page 316, same work), the natives say that it is a very valuable diuretic. It is used by them in all forms of anasarca and renal complaints; when the latter are not of an acute nature, but when chronic. It is also reported to be, in small doses, a valuable tonic, much dependence being placed on it by the Salvadorians. The dose as a tonic is in an emulsion or decoction, ten grains (0.6) and as a diuretic (8.0) two drachms. I have secured specimens of the portions used, viz: the root.

I am now experimenting with lippia Mexicana, of which I will send reports and description by next mail.

Jan. 21. In my last I gave you a description of what, in my opinion, was the most filthy place I had in all my travels ever come across, viz: La Union, San Salvador. Just, however, across a noble piece of water, dotted with islands, called Fonseca Bay, and about twenty-one miles from La Union, is where we are anchored at the present writing. Before describing the place and people, I will merely state that Nicaragua, San Salvador, and Honduras all border on the waters of this bay. It is filled with numerous islands, but Honduras has only the port of Amapala, and none other on this coast. Amapala is a quiet, neat, orderly and clean place, when compared with other towns I have noticed on this coast thus far. It has a population of about 750 souls, and the whole of the surroundings seems to inspire a feeling of respect for the natives even before you see them. The town is situated on Tiger Island, in the Bay of Fonseca, and in a naturally formed harbor, with good anchorage. The island is evidently of volcanic origin as is all this region, and the town is situated on the south-west slope of what is known as the Volcano of Amapala (extinct for over 200 years). That the town is in great danger from a possible eruption, which if it does come will engulf La Union and other neighboring small villages, is suggested by the fact that, standing barefooted on the beach, the sand even at a depth of from twelve to fourteen inches below the surface, is unbearable from the heat, and at twenty inches burns the hand and foot. The natives say that the heat has increased within the past two years, and that the mountain has grown in height over 250 feet. Will there be a repetition of the Straits of Sunda disaster or not? is the vital question here now as is also, how soon, if it comes? The situation of the town, apart from the danger above stated, is healthy, and the water after heavy rains, pours into the sea from the sloping streets. The soil is clayey adobe, and the streets are rough paved with cobbles. The buildings are much better built and cleaner kept than in La Union or San Jose, and are more imposing in appearance. The night soil is the most objectionable feature, though in rainy seasons nothing remains thereof after a heavy shower. In the center of the town, a public park has been built, unlike the "plazas" of Mexican towns, with shade-trees and benches and in the cool of the evening many couples are to be seen sitting about enjoying the night air.

The natives are an admixture of Indian and Negro, and Mexican and Indian, with here and there a European and Indian intermixture. They have a better and more manly and womanly appearance than those of Central American nativity thus far met with. The women are more modest in dress and manners. Their customs and habits are no different from those of the rest of the places, however.

The climate of Amapala is at present very nice and refreshing. During the wet season, from June to November, the average range is from 76° to 98° F., and in the dry season from 80° to 102° F. At night a pleasant northerly sea breeze cools and refreshes the air. Despite these facts, however, malarial diseases prevail to a great extent, on account of the existence of numerous tracts of marshy and swamp lands in the near vicinity of the town.

The food supply is limited to tropical fruits, fish, oysters in great quantities and of enormous size, and jerked beef. In this latitude people will not eat freshly killed beef. The bones are taken out, the meat cut in long strips, thrown over strings and dried in the sun. It is then ready for sale and for use. The water supply is as the case in all Mexican and Central American ports, from shallow wells and from cisterns (of rain water).

The diseases prevalent here are remittent and intermittent fevers, very little yellow fever, diarrhœa, acute dysentery, and, to my surprise, tetanus. The latter disease seems to be a sequence in nine out of every ten cases of injury to the person. I could not get any lucid answers to form an opinion as to the reasons therefor. There is one medical man here, a German, who has a fine drug store in connection with his practice. As he kept no statistics I am unable to give or form any idea of the ratio of mortality in any disease or in general. "No sabe" is the reply to "How many die of any given disease."

During my stay here before and at present I noted that the damiana (aphro. turn.) was largely used as also the contrayerva (dorstenia contrayerva, Linnæus, nat. ord.: urticaceæ). It is an acaulescent perennial. The name of the plant indicates and designates its use, being simply "herb against," or antidotal plant. It is a bitter tonic, of a stimulant nature, and is very much used here for all kinds of

low and continued fevers. It is also used both internally and externally for the bites of serpents. The portion used is the root; and the dose is half a drachm (grm. 2.0) powdered.

In speaking with the doctor ashore here, I casually mentioned the fact that I had a small two ounce sample vial of the fluid extract cascara amarga (bark Honduras, genus picramnia). He asked for it, and I desirous for him to test it, gave it to him. He stated that it was very much used in the form of a very strong tea, how much he could not say. The results obtained therefrom in syphilis and chronic skin affections were wonderful (if true.) In syphilis especially he narrated cases, and sent for and showed one woman who was noted for her loose ways, as an example of its effects. She was suffering from the venereal complaint in its second stage, and had been covered with bullæ from head to feet, but to use her own words: "I am as well now as ever I was; in fact, as healthy and pure as when I left my mother's womb." I am promised notes of cases where the fluid extract is tried; as also a full history of the uses and results thereof of the lippia Mexicana.

We intend visiting Corinto and Rialijo in Nicaragua, where I am informed that there are varieties of algæ and of the aloe (agave Mexicana) unknown to the United States, in use. I will make inquiries and send notes. REGNAR.

AMAPALA, Honduras.

Pharmacy as a Profession.

Referring to your article, in the February No. of the GAZETTE, entitled "Shall We Have a Profession of Pharmacy?" in which you state that the object of my reception to the members of the Trade Association of Philadelphia Druggists was the elevation of professional pharmacy, and the encouragement of professional and social relations between the professions of pharmacy and medicine, I would beg to say that such was my object, and I am glad to see that the GAZETTE endorses it as a "very worthy one." The evolution of events has brought us, as pharmacists and physicians, face to face with important problems involving the interests of the two professions, and which can never be settled except by inter-professional co-operation. These problems must be solved before pharmacy can be recognized as a liberal profession; and it was the object of my reception to bring the practitioners of pharmacy and therapeutics together, so that a mutual understanding might be reached. These problems have been happily touched upon in your able editorial, and, in response to your request for reply thereto, I have endeavored to give my opinions concerning the points made by you in the following brief references to them:

The colleges of pharmacy, both at home and abroad, teach that pharmacy is a profession, and this doctrine seems to be a correct one, for a number of reasons. The pharmacist is peculiarly situated in his relations to science, literature, and the medical profession, each having special claims upon him, the fulfilling of which would necessitate him to be a scientific and professional man, and, therefore, there is no doubt that pharmacy should be a profession.

First, and probably of greatest importance, is the relation of pharmacy to the proprietary medicine trade in all its varied forms. You have enumerated this among the difficulties that pharmacy will have to encounter in its efforts to become a profession. I say that *pharmacy can never become a profession as long as pharmacists are agents for and manufacturers of proprietary and secret medicines, dealers in cigars and fancy goods, and clandestine rum-sellers.* The whole system is unethical, unscientific, and unprofessional, and therefore excites the righteous indignation of every right-thinking scientific and professional man. It is impossible to imagine two principles more opposite to each other, than the scientific and beneficent spirit of a liberal profession on the one side, and the secret, exclusive, everlasting monopoly system of the proprietary medicine trade on the other. The pharmaceutical profession of this country are greatly indebted to your valuable columns for demonstrating the fact that pharmacy is being rapidly monopolized by the "patent" medicine trade in the guise of so-called "trademark-pharmaceuticals." Through gross misrepresentation on the part of the friends of the "patent" medicine business your protest against this system was probably not well understood at first, but now the profession of pharmacy seem to awake to the importance of the subject, and do not propose to be ensnared or deceived any longer. The members, therefore, will undoubtedly unite with you in the protest against the usurpation of their prerogative, which, if allowed to go on will finally end in converting the pharmacist into a mere tradesman in ready-made goods, and the tools of a few unscrupulous dealers and patent medicine manufacturers.

In the next place I consider any feeling on the part of the retail druggist against the larger pharmaceutical manufacturing houses, entirely uncalled for. All should be manufacturers, and the only difference between the smaller corner drug store that manufactures its own preparations, and a great manufacturing house, should be one of degree only. Place both on such a basis, and the competition will be a fair one. It will then be merely a question of knowledge, business ability and quality of goods which will be the more successful.

But pharmacy to advance to the position of a profession must do something on the positive side. To become a science pharmacy must have a literature, as you have said; and while I hold that it has one now, this, however, is restricted to pharmacists alone, and at no time becomes such a portion of medical science as to receive the attention of medical men. Thus we have in our medical colleges no department worth considering, where pharmacy is taught or even demonstrated. The branch of materia medica and therapeutics deserves no longer the title of the former, for the knowledge of drugs, their character and preparation has long since been left out of medical education; so much is the latter the case that the physician of to-day knows little of what he is prescribing, nor could he at any time distinguish good from bad, or judge by inspection or analysis of the quality of his medicines; scarcely, if at all, does he, indeed, know the strength of regular galenical preparations. The medical profession depends in this upon pharmacy, and yet are unwilling to give pharmacy a recognition in its proper place. In order to raise himself to a professional standard that may be accepted by the medical profession, the pharmacist must do scientific work and publish his results in medical literature. Each pharmacist should thus endeavor to contribute something to medical

knowledge in his department of medical science, and by so doing he will receive the reward of professional position, and elevate himself beyond the tradesman and shop-keeper. The preparation of medicine must depend upon therapeutics, and the pharmacist who prepares medicine in the best manner to meet therapeutic demands, informing physicians of the fact through the medium of a carefully written scientific article concerning such a medicine, published where it will meet the medical eye, will surely receive credit, and create a demand for his goods thereby, for the physician will naturally believe that the pharmacist who knows the most about a preparation is the one most capable of preparing it.

To sum up, therefore, it seems to me that the elevation of pharmacy to the position of a profession depends upon the following requirements: First, the abrogation of the proprietary-medicine-trade in all its forms; second, scientific work and literature upon the part of the pharmacist. To the latter it may be urged, however, that pharmacists have already done, and are doing, a great deal of scientific work which has appeared in pharmaceutical journals. This, no doubt, is true; but first of all scientific work of that kind is not general amongst pharmacists, and is usually limited to teachers and students. The practical pharmacist usually loses sight of it in the pursuance of his trade vocation. Again, such work as has been done, has been of little service to medicine, buried as it is in pharmaceutical literature, not even extensively read by pharmacists, and totally ignored by the medical profession. I would therefore, suggest that a distinction be made, and a final line of demarkation be drawn at this point, and that upon the one side of that line be placed those who practice pharmacy as a profession, and on the other those who practice it as a trade. Let the former purge their establishments of proprietary medicines entirely, and devote themselves to scientific work, and the cultivation of the practice of pharmacy. As the word pharmacology has been chosen to represent the science of drugs, let professional pharmacists be distinguished by the title pharmacologists, as suggested by Dr. F. E. Stewart. Let pharmacy be recognized as an essential branch of medicine to be taught in its full extent in medical schools; let pharmaceutical literature be allowed a place with therapeutics in medical journals; and also let the scientific pharmacist be accorded an honorable place in medical discussions, many of which often smack of absurdity from the simple want of knowledge on this subject, so essential in the treatment of disease. The adoption of this course would be to raise up a profession of scientific men devoted to the practice of pharmacy as a profession, and as they would have the interests of their science at heart they would have a professional and scientific spirit. Professional pharmacists bound by medical ethics would not be guilty of unprofessional conduct, so that the criticisms made on that score, referred to in your editorial, will not apply to them.

In regard to the position of the medical press on this subject: there are some journals no doubt, as you say, which will bitterly oppose such innovation; but there are journals that have a due regard for a scientific and professional spirit, and they will aid the effort by publishing the work of scientific and professional pharmacists. This will not alone increase the value of their journals, but, by enlarging their spheres, also increase the size of their subscription lists.

LAWRENCE WOLFF, M. D.
Twelfth and Chestnut Streets, Philadelphia.

The Metric System.

I had no idea of writing upon this subject until I saw the February number of the GAZETTE, and found in it two letters sounding the note struck by Dr. Record in the January number. The subject is by no means a new one; it has been discussed at length many times within the last few years, but must occasionally break out anew. Say what we will of the advantages or disadvantages of the decimal over the ordinary system of writing prescriptions, the fact remains, that the "fol-de-rol" or "metric system nuisance," as your correspondents style it, is gaining ground. It requires little argument to prove that it has something to commend it, or educated men are a set of fools to adopt it. I do not propose to discuss this question at all, but simply take the fact as it exists, that the metric system is already in use in most strictly scientific books in certain branches, such as chemistry, physics, physiology, etc. The time to get rid of it has passed. All that is left for such opponents as the writers of these articles, and hundreds of others who oppose it simply because they have not the inclination or energy to inform themselves upon the subject, is to either stop reading modern works and articles, or inform themselves.

Why men will acknowledge themselves incompetent to master so simple a thing as the metric system of weights and measures, and claim to be educated men, I cannot understand. Why men will make such a bugbear of a little addition, subtraction, multiplication and division, I am unable to see.

Let every one of these men to whom this is a stumbling block, sit down and spend one hour a day for a week working at it and he will be surprised at his own stupidity. Let him write out the following table and hang it over his table or desk in plain view:

GRAMS.		GRAINS.	GRAINS.		GRAMS.
1	is equal to	15.43	1	equals	0.065
2	"	30.86	2	"	0.129
3	"	46.29	3	"	0.194
4	"	61.72	4	"	0.259
5	"	77.15	5	"	0.324
6	"	92.58	6	"	0.389
7	"	108.01	7	"	0.454
8	"	123.44	8	"	0.518
9	"	138.87	9	"	0.583

Let it be desired to translate the prescription quoted by Dr. Record as follows:

℞ Calcii sulphidis.....0.25 — nearly gr. iv.
Carbonis animalis...1.00 — nearly gr. xvss.
Rad. liquirit.....2.00 — gr. xxxj.
Ext. gentian.....q. s.

0.250 is $\frac{25}{100}$ = ¼ of a gram. In the table it will be seen that this is very nearly gr. iv. Or, we may reach it as follows: .25 is equal to .05 and .2 of a gram. Two grams are equal to 30.86 and .2 will equal 3.08 grains. Five grams are equal to 77.15 grains, but .05 will be equal to .77 grains, which added to 3.08 = 3.85, or nearly 4 grains. A simple glance at the table is enough to tell us that 1.00 gm. = 15½ gr., and that 2. grams = about 31 grains.

Suppose we wish to translate the following:

℞ Morph. sulphatis, 0.200.
Ex. belladon. 0.200.
Ex. nucis vom. 0.300.

M. Ft. pilulas no. xx

From the table we see that 2.000 grams are equal to 30.86 grains whence .200 grams must equal 3.08 grains.

From the table we see that 3.000 grams are equal to 46.3 grs, whence .300 equals 4.63 or about four and a half grs,

For all ordinary mental calculations the following table of approximate comparisons will be found very convenient:

gr. i	equals	0.060.
℈i	"	1.300.
ʒi	"	4.000.
℥i	"	30.
♏i	"	0.060 cubic centimetres.
fʒi	"	4 c. c.
f℥i	"	30 c. c.
Oj	"	500 c. c.
1 c. c.	"	15½ minims.
1 gram	"	15½ grs.
0.100	" "	1.5 grs.
0.010	" "	1-6 grs.
0.001	" "	1-60 gr.
1.300	" "	℈i.
4.000	" "	ʒi.
30.000	"	℥i.

In other words divide the milligrams (or the decimals above) by 60 and the result is grains. Or, cut off the third decimal place and divide by six to reduce fractions of a gram to grains. Divide the grams by four to reduce to drachms, or by 30 to reduce to ounces. This is only approximate, but convenient for mental calculations, and near enough for most purposes. No claim for accuracy can be sustained in our old system of doses, at any rate as long as a teaspoon, tablespoon, etc., are used as measures, Ordinarily we calculate a teaspoon to hold a drachm; but the modern teaspoon may be made to hold a drachm and a half by some persons, and less than a drachm by others. A teaspoonful is understood to mean a drachm, and would be written 4 c. c. in the metric system, or as some write it 5 c. c., which is a drachm and a quarter. A desertspoon is usually understood to mean ʒij or 8 c. c. and so on. I appreciate the difficulty of relearning the doses, in using the metric system, but this may be avoided by using the following rule: When a teaspoonful (ʒi) is to be given at a dose, from a two ounce mixture, write for as many grams as you wish to give grains at each dose. If, for example, you wish to give gr. x at a dose, write for ten grams to 2 ounces (60 grams), 15 grams for three ounces (90 grams), or 20 grams for a four ounce (120 grams) mixture.

Suppose it be desired to give gr. x of bromide of potassium at each dose, and gr. ¼ of morph. sulph. giving teaspoonful doses, it would be written:

℞	Potass. bromidi,	10	000.
	Morph. sulph.		250.
	Aquæ	60	000.

M. Sig. 4 c. c, t. d. or

℞	Potass bromidi,	15	000.
	Morph. sulph		375.
	Aquæ	90	000.

M. Sig. 4 c. c., t. d.

For a four-ounce mixture double the dose in grains and write it as grams, directing a teaspoonful to be given. A very little practice will make this rule easy to use, and free from liability to error. The rule may be reversed and used as a key to determine the dose in grains. Thus, in the above mixture 60 divided by 30 equals ℥ij, and at a glance we see that gr. x of potass. bromide will be contained in ʒi, and so there is ¼ gram of morph. sulphatis, there will be gr. ¼ to each ʒi. I have assumed that two, three, and four ounce bottles will continue to be used, that and therefore these quantities will be prescribed for some time to come.

In prescribing powders or pills it is more convenient, as long as the doses in grains are used, to prescribe 15 or some multiple of fifteen, so that the above rule may also apply to them as well as to the mixtures.

In most scientific works only one denomination less than the gram is in use, and that is the milligram or thousandth of a gram. It is advisable in prescription writing to use this method, and to draw a line at the divisions between the two denominations' places, as in the prescriptions above. This makes it next to impossible for the druggist to make a mistake in reading them. It should be remembered that one cubic centimetre (1 c. c.) of water weighs one gram; consequently we usually write all our quantities as grams and the druggist is left to measure or weigh the quantities as he prefers. Of course it should be borne in mind that a few of the liquors are considerably heavier than water and a slight allowance should be made for them; or better, direct them in c. c. The tinctures are slightly lighter than water, and some allowance ought to be made here, but it is of little importance in most cases as we seldom give the maximum dose, and as the patient's measure, the teaspoon, is so invariable.

I hope these few simple rules may be of use to some of your correspondents or subscribers, in showing them that the metric system is not so difficult to understand and translate as they imagine.

In closing let me advise them to invest fifty cents in Dr. Craig's little book published by D. Van Nostrand, 23 Murray st., N. Y., and look it up as they would anything else.

E. H. Bartley, M. D.

Brooklyn, N. Y.

The Metric System.

In the January issue of the Gazette the readers are treated to a communication on the subject of metric weights. This is a very interesting topic and it is published exactly in the right place—in a medical journal. Of individuals in private life the physician undoubtedly is brought face to face with this system of measures and weights more frequently than any other class of men. I submitted to the Gazette the prescription that seemed to cause the doctor from Liberty, Mo., so much uneasiness; therefore I consider it my duty to make this response. To quarrel over the subject is beneath my professional dignity; if individuals cannot see their own interests furthered in the advance of science, they are not progressive. In German and French literature the metric system is used exclusively, and since it shall be the only system used in my translations from foreign journals, I beg my readers to indulge me in a short explanation, as to the simplest method of translating from one system to another.

The advancement of science often brings with it obetacles that seem insurmountable to the ordinary mind, but that certainly cannot be said of the metric system. The aim and purpose of the Therapeutic Gazette is to bring something new and valuable before the profession to advance science in the field of therapeutics. While the metric system is no

longer very new, yet we can see there are always some individuals who are tardy in everything; they are slow to acquire, and the fault generally lies in a defective preliminary education, and not in the excuse that is generally given.

The metric system has been called by many the decimal system, because all of its multiples and subdivisors are powers of ten. The metre is the unit of length, and is found by taking the ten millionth part of the earth's quadrant or the forty millionth part of its circumference, and is equal to a little more than 39 inches. The word metre means measure. The prefixes representing division of the metre are of Latin derivation, as deci., one tenth of a meter (0.1 m.); centi., one hundredth of a metre (01 m.); milli. one thousanth of a metre (.001 m.). The prefixes representing the multiples are Greek derivatives, as deka., ten (10 m.); hectameters, 100 m.; kilometers, 1000 m.; myriameters, 10,000 m. The unit of measure of capacity corresponding to English liquid and dry measure is obtained by making a cube whose sides are are one tenth of a metre, or one decimeter, and is called a liter. The unit of weight is obtained by making a cube whose sides are one hundredth of a meter (or one centimeter). This cube filled with water, at a temperature of 39.2°C, weighs a gramme, which is equal to 15.432 grains, or as is ordinarily taken, 15 grains. The prefixes representing the subdivisions and multiples are the same throughout whether used in connection with the unit of weight or capacity. The liter is equal to 2.113 pints; the deciliter to one-tenth that quantity (or 0.2113), while the dekaliter is ten times that much (or 21.13) pints, always increasing or diminishing in a tenfold ratio. Here is the whole system in a nutshell, and anybody who has learned simple multiplication and division can understand it. It is no longer as new as the doctor seems to think. It was established by a law of the national convention held in France in 1795. In 1866 the metric system of weights and measures in its essential features, was legalized in the United States by a law of Congress, since which time it has been taught in public schools. If it were really so difficult to comprehend this system of reckoning, children 15 years of age would not be so familiar with it. Since time immemorial science has had to battle against obstructionists, and the medical profession has always had, and seemingly still has, its goodly share of them. Some men cannot reason, others will not reason, and both classes are to be pitied. The introduction of new remedies the world over is retarded by this class of individuals, but they style themselves "conservatives" instead of obstructionists, which they really are. When a young man who loves progress, assists in introducing both new and valuable things, these old fossils put on a wise face and say "He thinks he is smart." In my estimation it is certainly better to acknowledge that you do know something, than to publicly proclaim that you are ignorant of simple little things and do not want to know them, and that a very slight effort "makes you tired." In short, there is no excuse for a man but indolence and weakmindedness, who says the metric system is unintelligible. It has been adopted to establish uniformity, the effect of which can be seen every day; it matters little whether we take up a French or Russian journal, a German or a Spanish, the system of measures and weights is the same, and if all English writers could be persuaded to adopt the use of this system entirely, then there would be a great change, inasmuch as it would compel men to study the new system and become familiar with it.

For the benefit of at least one individual I will translate the formula above referred to:

℞ Calcii sulphurat puri, 0.25
Carbonis animalis, 1.00
Rad liquirit, 2.00
Ext. gentian, q. s.

℞ Calcii sulphurat, gr. iv, (about)
Carbonis animalis, gr. xv.
Rad liquirit, ʒ ss.
Ext. gentian, q. s.

The solution of so simple a problem as this one can be learned in five minutes, and the ability to translate from one system to another can be acquired by any one with ordinary mental capacity and a little study. Under the heading of "Weights" in "Dunglison's Medical Dictionary" a full explanation of this subject can be found. The article above referred to has caused no offense in any respect, but since advancement in science is the object of this journal why should an attempt be made to carry out such pernicious advice as the discontinuance of the use of the metric system? We cannot look upon it as an accomplishment, but as an absolute necessity, at least to one familiar with foreign languages.

Men who occupy positions of trust and honor as do physicians, should become familiar with a subject that is so generally used. To acknowledge that one is incompetent to reap the benefits of a given art is prima facie evidence that he is not a fit subject to set himself up as a critic. Concerning the formulas occurring in foreign literature they shall always be given in the standard system in translations that I submit to the GAZETTE for publication. Nothing affords me greater pleasure than to be of service in furthering the science of medicine in any of its departments.

C. W. TANGEMAN, M. D.

CINCINNATI, Ohio.

The Metric System.

I have already expressed my opinion of the Metric System, and probably it would be more graceful for me to retire quietly to the ranks of the great "majority," but another unknown quantity assumes the advocacy of "The Metric," and confidently announces that Dr. Records and his confreres of old fogies will certainly be "badly left," because, forsooth, they do not believe as does —"Naught," or "O," or whatever the character at the close of the communication may represent.

I might write until doomsday, and so might "Naught," each advocating his favorite system, and unless there was argument produced to sustain bare assertions, all would indeed amount to "naught." I fail yet to find any good reasons in the article of this writer, to substitute the Metric for the present system.

To begin with, he brings in that would-be religious reformer Matthew Arnold to prove that the "majority is always in error," and that "the truth resides always with the remnant." Admitting for the sake of argument that this assumption is true, it remains yet to be proven that "the majority" oppose the Metric System. Simply to state that "the majority" oppose this system, in order to dove-tail it into Matthew Arnold's erroneous assertion, proves noth-

ing. Moreover the man who argues "that the world cannot do without the Bible, and it cannot do with it, as it is;" "who," as Dr. Kendrick says, "reduces Jesus Christ to a mere teacher and who has reconstructed christianity with christianity left out," is not, in my humble opinion, authority on any question pertaining to the metric system. It just here occurs to me that "naught" must have been a thorough sympathizer with the "remnant" who struggled with the great "majority" in the "late unpleasantness." And if he were it is no discredit to him; still it is not all consoling to think, now that the breach has been healed, and that peace and prosperity reigns, that "the majority is always in error."

"Naught" anticipates the utterances of disgust at his explanation of the metre and its outgrowth of centimeters and decimeters, while his only attempt at an argument in favor of the system is its regular increase and diminution by tens. In this we fail to see any advantage, for while the increase and diminution by tens is all easy and nice enough, we have an outpouring of grams, centigrams, meters, centimeters, decimeters, etc., sufficient to set any brain "wool-gathering." The idea of mixing avoirdupois, troy and apothecaries weights in medicine is simply puerile, and I deem it useless to argue that any physician will write a prescription using the characters ℈, ʒ, ℥, and expect it to be filled by avoirdupois weight. We know that "practically there is no such thing as apothecary's weight. In buying and selling avoirdupois weight is used, and in dispensing troy weight is used." There is nothing very complicated or troublesome in this, I take it.

Perhaps it "*is* destined to be the universal system among enlightened people," of whom "naught" is doubtless a "remnant:" perhaps "it has been adopted by scientists everywhere," perhaps "it is the only legalized system, even in the United States to-day," and perhaps "this *will* be a surprise to the majority;" but not to the favored "remnant" with whom truth always resides, and one of whom is "naught;" but I fail yet to see argument in proof of all this. The blind dictum of no one is to regulate the system of medicine, or any part of it, and though adopted by the American Medical Association, I still fail to see why the metric system should be accepted, because that honorable body has adopted it. We would like plain convincing reasons for its adoption, else it may ultimately cause as much trouble to that Association, as has the time-honored Code of Ethics.

In fine, Dr. Records and the erring "majority," may be convinced of their error by facts and logical deductions, but I opine that they will never blindly accept any system for fear of being "badly left," by the the apish "remnant," nor will they permit themselves to be lashed into line by accusations of "laziness," "ignorance," etc. Convince them that there is reason and advantage in this or any other system, and they will adopt it with that alacrity and ease, too, which will prove them neither lazy nor ignorant.

Yours for sound reasoning and solid facts,

J. P. Booth, M. D.

Las Cruces, N. M.

The Metric System.

I fully endorse the articles written by Drs. Palmer and Booth in the last issue of the Gazette. Both medical gentlemen have presented arguments which are sensible and correct, as far as my judgement is concerned. Errors may possibly arise from the adoption of the metric system in writing prescriptions, yea, fatal errors may result from misinterpretation. Our present system of pounds, ounces, scruples, drachms, and grains, is far preferable, and will not admit of mistake if the prescriptions are plainly written. If the apothecary is master of his business and is careful in compounding medicines, there is no danger of sacrificing human life by mistakes. I tried to master this new system, found it to be an elephant which I could not carry with me, became disgusted with it and paid no more attention to it, feeling that no practical benefits would result from its use, and felt that it was perplexing to an old man like myself. It is rather hard to learn old dogs new tricks, and for me to learn this metric system would place me in a position similar of a tuner of pianos, I have heard of, whose experience was limited, requiring him to bring with him a book "The Tuner's Guide," to aid him in tuning. What opinion should we have of a physician who was obliged to carry Flint's Practice of Medicine, and a work on surgery to meet disease, comparing the symptoms of the patient with written authority to enable him to form a correct diagnosis and to prescribe? His position would be embarrassing and humiliating. Our present system of weights and measures is as old and older than the Constitution of the United States, and any medical man can carry it in his head. Many years ago I attended medical lectures. The professor on materia medica was teaching on anthemis nobilis and leontidon taraxacum. One day he was asked by a tall specimen of humanity the meaning of the great long latin words used in his lectures. The professor said the first was chamomile and the other was meant for dandelion. "By golly," says the student, "This is too much pork for a shilling. I guess I will go home and work on the farm." Another Vermonter who wes rather fresh and six feet in his stockings, called at the room of one of the professors, with pains in the bowels, vomiting and diarrhœa, and told the doctor that he had cholera infantum, the symptoms tallying with those he had been reading in a medical book. The doctor exclaimed, "the devil you have." and wrote a prescription, telling him to call on the apothecary, who would give him directions. He told him to go home and go to bed, and take the medicine as ordered and have his diapers changed every hour night and day, and oftener if he had a movement of the bowels, by his nurse. This man was honest in believing that he had the attending symptoms of cholera infantum, but could not understand the Latin name.

A doctor or apothecary may in the metric system make a mistake in adding or dropping a cipher, which will make some difference in the prescription. To carry out this system is like exploring the dead languages. I like the plain English mother tongue, and in a matter of the importance of prescription writing only the mother tongue should be used. The physician who carries in his head the metric system must have special room in the brain for ciphers. The young physician can learn it, and when he explains the grams etc. of the metric system used in a case of disease, to the old doctor who understands not how much medicine the patient takes, the latter is mystified and the consultation rendered nugatory and use-

less. On the whole I think the present system of weights and measures or Troy weight, is as good as can be devised for our country. The only practical benefit is the interpretation of foreign authors by young physicians and students. Independent of this it is a learned folly and of no practical use to the physicians at large, in this land.

F. FOSTER, M. D.

SANDY HILL, N. Y.

The Metric System.

We are pleased to see in the THERAPEUTIC GAZETTE of January and February that Drs. Records, of Liberty, Mo., Palmer, of Boulder, Col., and Booth, of Las Cruces, New Mexico, have attacked the metric nuisance, and we believe those gentlemen reflect—in this matter—the sentiments of all the careful, unostentatious portion of the medical profession.

Whenever we happen to see a prescription brought into a drug store to be filled, wherein the writer has used the metric system, we are strongly inclined to the belief that the doctor who wrote it is resorting to a very questionable advertising dodge wherewith to deceive or mystify his patrons. We, as an American citizen, feel loyal to the legal language, weights, measures, etc., of our country. The English is the legal language of the greater portion of North America and of the most powerful and enlightened nation of Europe, and its use—for good and sufficient reasons, that are well known to the best linguists throughout the civilized world—has been sanctioned by the wisdom and practice of time, fully long enough to demonstrate its superiority over all other, and to us the above is good reason for believing that at no very distant time the English language will be the legally accepted language of the world.

Let us say to Brother Palmer that we have faith enough in the good sound sense of the medical profession, to believe that there is practically no danger of an epidemic toward the metric system, as it is too fruitful a source of error and danger—principally from its not being practical with an English speaking people—to ever become popular with our best physicians and druggists.

FLOYD CLENDENEN, M. D.

LA SALLE, Ill.

The Metric System.

I am in sympathy with Dr. Records and others in opposing the use of the metric system, until at least, we can have it with weights, measures and all things necessary to put it into practical use. To effectually accomplish this would necessitate, in addition to the required weights and measures, the changing of all doses in our treatises on materia medica and therapeutics, which change our publishers and authors will be very slow at least to adopt. Until this work is done, it appears to me folly in the highest degree for any individual or class of people to undertake to force 99 per cent. of the readers of a medical journal into the use of a system which they instinctively repudiate.

The metric system is very simple when weights and measures are used adapted to its divisions; but when we are obliged to make calculations of the 1000000th decimal, more or less, of a unit of a measure or weight, in order to ascertain a given dose, the general practitioner is not willing to make the calculation, and hence the articles containing these unwelcome innovations are lost to a very large majority. As an illustration of the utter silliness of this unwelcome practice, allow me to quote from a recent article in the St. Louis Medical and Surgical Journal: "Five grains of iodoform ground with twenty-five grains of starch, and moistened with forty cubic centimeters of water, of which fifteen cubic centimeters were injected." The first part of this prescription having been given in grains how much more good sense would have been exhibited to have given the last part in a measure that all could as readily have understood.

J. P. COWLES, M. D.

CAMDEN, MAINE.

The Metric System.

The wail from Liberty, Mo., has a faint echo here, but can the world afford to stand still because we old fogies will not learn to think in the metric system? Not much! It is exasperating to us that progress waits for no man. I have provided myself with a set of metric weights, still it costs too much effort to think metrically, and, for us sluggards, can't you Mr. Editor, do our thinking? Every time a communication comes to you with metric weights, can't you translate it (in brackets) into the old fogy style? In that way suit all parties. Really there is no need of this clashing between the two systems. Undoubtedly the metric is much the better of the two and there is no valid reason why medicine should not keep time with all other sciences and adopt it.

CHAS. AMBROOK, M. D.

BOULDER, COLORADO.

Carbolic Acid Injections in Hæmorrhoids.

The treatment of piles with carbolic acid hypodermically is seriously condemned by some, or I might say, nearly all of the leading men in our profession, and for that reason I have been deterred from giving it a trial, while others, who know nothing of medicine as a science, are amassing fortunes in this practice.

Only a week or ten days ago one of those traveling men was in our town treating piles by that method, and a gentleman who says he is personally acquainted with him told me he was a shoemaker and had never studied medicine, but that a physician had taught him to use the hypodermic syringe in the treatment of piles, and that was all he knew about medicine. Whether he uses carbolic acid or not I do not know; but he uses something with which he cures piles, to my certain knowledge.

Not in our town, for the cases treated here have not had time yet to get well, but in other towns he has treated a great many, some of them my acquaintances, including my brother who lives in an adjoining county, with the effect of curing them all, and in no single instance have I heard of any accident attending his method of treatment. Now, I desire to ask the readers of the GAZETTE, if there is not something radically wrong in condemning a practice that even non-professional men carry on so successfully, and if the failure of those who have tried it is not due to the fact of using the acid too concentrated? If any of the readers of the GAZETTE have had success in this practice I would be glad to hear from them and to learn their manner of operating, the strength of preparation used, etc., for I am constrained to believe that the profession have cast these injections aside without sufficient trial.

J. W. GRIRARD, M. D.

WINCHESTER, Tenn.

Chloride of Zinc in Gonorrhœa.

I am an old fossil in the practice of medicine, aged 65 years, but I take infantile joy in reading the THERAPEUTIC GAZETTE, for I see no medical publication which is better filled with chunks of practical medical knowledge than it. In my opinion it, moreover, improves with age and keeps abreast of the medical literature of the day.

I write at this time for more specific or definite information relative to the use of chloride of zinc in the clap, as recommended in the last December number, page 511, in connection with your notice of Dr. Otis' work on genito-urinary diseases. Please give me Dr. Lloyd's formula, or the one you have found so efficacious in your practice, and also inform me when and how often to use it; whether in the acute or sub-acute stage. There is no copy or reprint of the London Lancet for the year mentioned, in this place, and hence I am obliged to trouble you for definite information in respect to the proper strength of the solution, and time and frequency of using the same as an urethral injection, and I feel confidence in your courtesy for a satisfactory answer, by which you will oblige your subscriber,

G. H. ATTWOOD, M. D.

WOODBURY, Conn.

[Lloyd's choice of chloride of zinc in gonorrhœa was based on his conception of the affinity it has for albumen. His formula: ℞ Zinci chloridi, gr. j, aquæ puræ, ʒ j. M. Sig. To be used as an injection every eight hours. In addition the perineum and penis are to be bathed frequently with tepid water.

We use the injection as often as six times a day, directing the patient to micturate before each injection.

Should this strength of the injection occasion very severe pain it may be weakened; and if no very severe pain is caused the strength may be increased. —ED. THER. GAZETTE.]

Salicylate of Soda in Rheumatism.

The article "Salicylic Acid in Rheumatism," by C. Barlow, M. D., in the GAZETTE of January 15th, leads me to give a brief statement of my experience with the salicylate of soda in the treatment of acute rheumatism, while an interne in the Cook County Hospital, Chicago.

It was the custom there, in all acute cases, to commence with ʒ ss doses of the salicylate in simple solution, repeated every two hours until the tinnitus aurium and excessive perspiration gave evidence of the patient's being fully under the influence of the drug. Then the time between the doses was prolonged to four hours, and finally, as the acute symptoms abated, to three times a day.

The result of this treatment was a great amelioration of the fever and pain and tenderness, in from twelve to twenty-four hours. In the uncomplicated cases three or four days sufficed to establish convalescence, and at the end of a week—in some cases even less time—many were able to return home.

This is not a new remedy or an unfailing specific for rheumatism, but to the fact that it has not been the custom to administer it in sufficient doses and at short enough intervals to quickly secure its full constitutional effects, may be attributed its failure to accomplish desired results.

IRA E. MARSHALL, M. D.

638 W. Lake Street, Chicago, Ill.

Iodide of Potassium in Urethral Stricture.

I noticed a paragraph in your valuable journal, by Dr. D. P. Duncan, at Waynesboro, Ga., respecting the use of iodide of potassium in spasmodic stricture of the urethra. I wish to corroborate his experience as to its utility; and moreover, to state, that I have found the same drug in seven- or eight-grain doses, three times daily, to have a really marked effect on *organic* stricture, during its treatment by dilatation. The process has, during a rather large experience, been always facilitated by the administration of this salt (probably through its causing absorption of the hypertrophied part); at all events, I never have a case of stricture, organic or otherwise, without having resort to this agent; and I believe it to be really useful.

LOUIS LEWIS, M. D., M. R. C. S., ENGLAND.

1632 VINE ST., PHILADELPHIA, PA.

Migraine.

I have had three very marked cases of what Dr. W. A. Hammond calls the angio-paralytic variety of migraine. Symptoms: cold feeling in the stomach, nausea, noises in the ear, flashes of light in the eyes, could see only half of an object (marked contrast to the effects of belladonna), slight pricking and numbness in left hand and left side of tongue, feeling great want of air, suffocation, pain in head worse after vomiting. During paroxysms I gave belladonna, guarana, bromide of sodium. In the intervals between the paroxysms I gave one grain of cantharides in pills, three times a day before meals. Cases cured to date, three years after treatment.

WM. ED. CHOATE, M. D.

JACKSON, MICH.

A Stolen Diploma.

In September or August last I missed my diploma, issued by the Medical College of Ohio, of the class of eighteen hundred and seventy-four. Thinking I had mislaid it I gave the matter little consideration, but now I am satisfied that some one has stolen it, no doubt with the intention of practicing medicine. If so, I do not think it possible for the name to be erased, for it was on parchment and in one place had my name printed and the other written by pen "James Andrew Averdick."

Will you oblige me by noticing the above facts in the THERAPEUTIC GAZETTE?

J. A. AVERDICK, M. D.

COVINGTON, Ky.

Chilblains.

In reply to Dr. Wilcox's request for a remedy for chilblains, I would state that there are two which in in my own experience have been almost "specific:" 1. Painting repeatedly with a solution of sulphate of iron, and drawing on a pair of old socks to prevent staining the bed clothes. 2. The application of common glue, as hot as can be borne, and covering the same with cotton. Two or three applications, at intervals of three days, will prove effectual.

ALBERT M. COOK, M. D.

NEW CASTLE, PA.

Chilblains.

I would say in reply to Dr. W. J. Wilcox's question regarding applications in cases of chilblains that I have found collodion to be one of the most useful remedies with which to paint the affected surface.

E. A. GATCHELL, M. D.

BENTON HARBOR, Mich.

The Therapeutic Gazette

WILLIAM BRODIE, M. D., Editor.

ASSOCIATE EDITORS:

J. J. MULHERON, M. D. and A. B. LYONS, M. D.

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Urinary Analysis for Clinical Purposes.

A CERTAIN practical familiarity with the methods of making chemical tests has become, within the past few years, an essential portion of the physician's preliminary training. It is true that the doctor cannot furnish his office with all the paraphernalia of a chemical laboratory, and were he to do so, he could not command the time so to master the details of chemical manipulations as to make these appliances of any great use to him. But there are numerous ready tests, qualitative and quantitative, which require no especial skill, and which may furnish most valuable information bearing on the diagnosis or treatment of a case in hand, and the physician defrauds both himself and his patients, if, in these days, he refuses to avail himself of such aids as these.

The apparatus required for making tests of this character are of the simplest description, and year by year practical improvements are introduced whose object is to bring them within the reach of the multitude who are thrown into a condition of infantile helplessness by the mention of a burette or a pycnometer. The only apparatus which is now indispensable in making an examination of the urine, sufficient for ordinary clinical purposes, consists of a urinometer and a test tube or two. Quantitative tests, of course, require in addition some graduated apparatus, but this may consist of a single pipette, and, indeed, approximate results of real value may be reached even without this aid.

One difficulty that has detained the physician from making more frequent use of chemical tests, has been that the reagents most frequently employed have been caustic or corrosive liquids which could not be conveniently carried in the medicine case or even in a specially contrived case of their own. Chemists have recently turned their attention to the replacing of these by more portable reagents. Formerly strong nitric acid was the favorite test for albumen. Those who have accustomed themselves to its use will still prefer it to any substitute, but few will care to carry with them a bottle of a liquid whose disastrous effects on the clothing and cuticle have been, doubtless, more than once experienced.

Dr. Roberts, not long since, suggested the use of acidulated brine as a substitute for nitric acid in testing for albumen, and the improvement has been hailed with satisfaction by many who have learned by painful experience that nitric acid could be handled only with caution.

The reagent is prepared by adding to a saturated solution of common salt one-sixteenth of its volume of strong hydrochloric acid. The solution can be carried in a bottle with an ordinary cork stopper, and in case it is spilled on the clothing or the carpet, no irreparable damage will be done. Still the reagent is in a fluid form and is therefore not so portable as we could desire. It has occurred to the writer that a slight further modification of the test will remove this last objection. Citric acid may be substituted for hydrochloric acid, and the reagent can then be carried in the dry state in the ordinary medicine case. Since common salt is to be found in any household it is necessary only to carry the citric acid. The test is then made by saturating the urine to be tested with common salt, and adding to the clear fluid a minute crystal of citric acid. The only difficulty in applying the test in this manner arises from the circumstance that common salt often contains so much sulphate of calcium as to give a turbid solution, which would have to be filtered before adding the citric acid, if traces only of albumen were to sought, and it might possibly happen that in an acid urine the common salt alone might throw the albumen out of solution. In case there was any doubt on this point, a saturated solution of salt could be first prepared and filtered, and a little citric acid dissolved in it, but there is obviously no advantage in the test in this form over Dr. Roberts' acidulated

brine. If pure chloride of sodium, however, be carried, as well as citric acid, the test can be advantageously made in the manner first described.

But there are other new tests for albumen in the urine, a detailed account of which will be found elsewhere in this issue of the THERAPEUTIC GAZETTE, n a valuable article contributed by Dr. C. W. Purdy, to the Jour. of the Am. Med. Association, and these reagents have the great natural recommendation that they can be readily carried undissolved in the physicians' medicine case.

A happy suggestion was made some months ago by Dr. G. Oliver, of Harrowgate, Eng., that slips of paper might be impregnated with the various reagents employed in these tests and that the physician could thus compress into the compass of a vest pocket case all the reagents likely to be of service in making an examination of the urine. Such a pocket case is now manufactured by Messrs. Parke, Davis & Co., and we gladly commend it to the notice of physicians, believing that none who have learned its convenience will be willing thereafter to be without it.

The case contains, first, the indispensable litmus paper—a neutral shade, serving as a test either for acidity or alkalinity of the secretion. As tests for albumen the series includes four of the recently introduced reagents, whose value experience has already sufficiently established; these are. 1. Picric acid. 2. Potassio-mercuric iodide. 3. Potassium ferrocyanide, and 4. Sodium tungstate. All of these are to be used in connection with citric acid. To make the test therefore, a slip of the citric acid paper is first placed in a small test tube containing about 30 minims of the urine to be tested, and the acid allowed to dissolve. One of the slips charged with the albumen precipitant is then introduced into the urine, and as the reagent dissolves, the urine becomes clouded if albumen is present, the amount of turbidity giving an indication of the quantity of albumen.

Objections have been made to these newly introduced reagents on the grounds that their indications are not always conclusive. They not only precipitate peptones as well as serum albumen, but some of them yield precipitates also with the vegetable alkaloids. Thus picric acid and potassio mercuric iodide (Mayer's reagent) will produce turbidity in the urine of patients who are taking quinine. It may be said in reply that all chemical tests may lead to fallacious conclusions, if used by one who only half understands them, and that the new tests are not open to more serious objections than the old. Knowing that picric acid precipitates quinine as well as albumen, we refuse to accept as conclusive the unsupported evidence of this reagent, but if picric acid and sodium tungstate and the heat test coincide in their indications, we can no longer doubt. It is not difficult, indeed, to remove alkaloids, if present, previous to making the test, but this operation involves so much "chemistry" that it cannot be recommended to the physician. The method, however, is so simple that it may be stated here for the benefit of the few who may desire to try it, and is as follows: Render the fluid alkaline by addition of a few drops of liquor potassæ, add one-fourth its volume of chloroform, and agitate together—not too violently for fear of forming a permanent emulsion—allow the chloroform to subside, carrying with it the greater part of the alkaloid. The aqueous fluid may be decanted and treated, if necessary, with a fresh portion of chloroform, but in an examination of the urine, a single washing will generally suffice. Unless, however, both albumen and vegetable alkaloids are present together, the albumen precipitate in any case is identified by its persistence on the application of heat to the fluid containing it. Indeed it is advisable always to supplement the use of any of these reagents, except ferrocyanide of potassium, by the heat test, applied to the fluid containing the precipitate.

As tests for sugar, the series of test papers includes, first, a modification of the usual copper test; and, second, picric acid in combination with carbonate of sodium. The copper test is less sensitive than in the usual form, in which a caustic alkali is used; when these are accessible liq. sodæ, liq. potassæ, or aqua ammoniæ should be added to increase the sensitiveness of the test, but even without such addition the reaction generally enables the physician to make the diagnosis of glycosuria. The picric acid test is comparatively new, and is said to be exceedingly delicate. It is a modification of Moore's test, the presence of sugar being indicated by a darkening of color in the fluid on prolonged boiling. When picric acid is present the color changes very rapidly, and minute quantities of sugar are detected by the reaction.

In this connection we may allude also to the sugar test flasks put up by Parke, Davis & Co., which enable the physician readily to make quantitative estimations of sugar in the urine. The little flasks are hermetically sealed, so that their contents undergo no change with age. Each one contains a quantity of Fehling's solution just sufficient to decompose one-fifth grain of glucose. We feel sure that the busy practitioner will appreciate the convenience of devices such as we have described to simplify the chemical tests he has occasion to make, and we need offer no apology, therefore, for having dwelt at such length upon details.

Experimental Therapeutics.

ALTHOUGH the ideal physician of the future will be expected to prevent disease, and will be remunerated for so doing, the grand mission of the contemporary profession is therapeusis rather than prophylaxis. It is for curing (in the corrupted sense of the word—"to heal"—rather than in its etymological sense—"to take care of") or for attempting to cure, that the physician is paid. He devotes much time and thought to public sanitation and other means of prophylaxis, but this is all a labor of love—done *gratis*, *pro bono publico*. While "an ounce of prevention is better than a pound of cure" has passed into a proverb, the people have given only mental assent to the proposition, and until they are educated up to such an assent as will establish a sympathy between the cerebrum and the pocket, the proposition must stand as an embodiment of a wisdom which is ideal rather than factual.

The practical mission of the physician being conceded, as above, it devolves on him who seeks to fulfil it, to do so to the fullest extent of his capacity. His obligation in the premises, is not only the commercial one, to give value received, but it is also a moral one, for the issues committed to his charge are the weightiest known—"all that a man hath will he

give for his life." This obligation implies that he shall bring to the practice of his profession, a thorough acquaintance with what has been developed by his predecessors, for the relief or cure of disease, and that he shall not remain ignorant of the advances made by his contemporaries. But the obligation also implies more than this; it implies that the physician shall not rest satisfied with the contributions of others to the common stock, but that he, too, shall improve the talents or talent committed to him in trust. The fact that he may have had but a single talent confided to him, in the shape of natural ability, does not justify him in burying it. The buried talent adds to itself nothing, even by accretion; it rather loses through the destructive corrosion of treacherous memory, the only antidote to which is exercise. The physician, therefore, who does nothing to improve his talent, yearly becomes less qualified to practice his profession, and eventually degenerates into an empiric. To put it on no higher ground, it is not profitable in a pecuniary sense, for him to neglect his talent, and the grumbling of many of the "fathers in Israel," who see their clientele slowly dwindling away at a time when their years and experience should have made it increase, is the strongest evidence of the fact.

Progress consists in the perfection of the known, and in the discovery of the unknown. The starting point of progress is a complete knowledge of the known, and, confining ourselves to the domain of therapeutics, the physician who would add aught to the common stock in this division of medicine, or to any particular section in it, must be thoroughly familiar with what others have contributed thereto. Such familiarity with the whole division, in its present state of developement, implies a degree of knowledge to which comparatively few general practitioners have attained, and if it were insisted on as a qualification for advancement in any section, it is to be feared that those who would advance would be few. But each physician may readily possess himself of all existing knowledge in one or several sections. To descend from the general to the special, we might instance the therapeutic properties of drugs. Few physicians know all that is known of all drugs, but there are some drugs with whose known properties and uses all who employ them are thoroughly familiar, and there are many more, thorough familiarity with all that is known of which, it would require but a minimum of effort to acquire. If each physician, as he is to an extent in duty bound, were to explore beyond the limits of existing knowledge in the direction in which he is familiar, the accumulation of additional knowledge in those directions would surprise those who imagine that the ultima thule had been reached.

But the exploration of the unknown, when we come to the effects of drugs on the human economy, implies experiment, and we are here confronted by the question: "Is the physician justifiable in thus experimenting on his patients, and more particularly on those who reward him for his services?" The question is an important and complex one, and scarcely admits of a categorical answer. In seeking to answer it one is met at the very threshold by the moral element which enters into it, and while there are certain unalterable moral truths (whether the outgrowth of human experience or dogmatically enunciated, it is not now necessary to enquire) there is much which they cover only in a too general way, to make them a definite guide to conduct. The physician in his capacity as a scientist may not break loose from even the least binding moral restraint, but he must, from the very nature of things, not unfrequently be his own "guide, philosopher and friend." In his answer to the question he must take into consideration all the circumstances of each individual case, and then, being sacredly honest with himself, let the light of his own conscience lead the way. While under no circumstances will the honest man thus led jeopardize the life of his patient, he will find many opportunities for making that patient a means for the acquirement of knowledge which may redound to his own future good and to the good of his fellows.

Doubtless there are those, even among our readers, of a more impulsive nature, whose instincts will at first blush cause them to rebel at the thought of making the human being who confides his most important interests to his physician's charge, the object of a scientific experiment. Before such have, however, fully committed themselves, we would suggest to them that the sacred body whose precincts they would not invade, except as their way is fully illuminated, is not a mere chemical laboratory, the laws governing the operations in which are fully known, and results in which can be safely predicated on previous results following causes supposed to be similar. So fully recognized is this fact by the educated and experienced physician, that to him every case he is called upon to treat is an experiment, and it is only the ignorance of the empiric which looks for definite results from the exhibition of even the best known drugs. Thus it is, and thus it ever must be, until medicine becomes an exact science. The physician who does not positively know that aconite, for instance, will not, in a given case, allay inflammatory fever, that salicylic acid will not cure a case of rheumatism under treatment, or that ergot will not check a pulmonary hæmorrhage, performs an experiment in every instance in which he administers those drugs under the conditions named.

The line of thought above outlined leads more directly, perhaps, to the subject of new remedies than to any other. The new remedies, so-called, occupy, however, very much the same relation to the question of experimental therapeutics that the older remedies do. In no case is a new remedy placed before the profession without a sufficient accompaniment of information concerning it, to indicate its physiological properties at least. This information has usually been obtained through sources sufficiently reliable to form the basis of further trial, or through experimentation on inferior animals. These remedies demand at the hands of the profession, and in the interests of humanity, the same "experiments" as are daily made with the older drugs, and through the projection of which beyond the ordinary limits the field of knowledge is to be enlarged for the good of man.

Serving Two Masters.

WE have the dictum of the highest authority to the effect that it is impossible for a man to render proper service in directions whose interests are opposite. While serving in one direction he must neglect the other, and if it were possible for him to equally divide his services the half would be

unsatisfactory to their recipient. The experience of the world, in every-day life, furnishes the strongest possible support of the divine dictum. It will meet the requirements of our present purpose to draw on the quasi-pharmacists who abound, for an illustration of its truthfulness. These gentlemen, while soliciting the support of the profession, seek also the patronage of the public, and to the extent that they succeed in securing the latter they not only neglect, but positively antagonize professional interests. This antagonism does not cease with the pecuniary features of the case, although we shall not refer to the others at this time. In the division and subdivision of labor which are the outgrowth of a high degree of civilization, the fact is not disputed that it is the mission of the physician, especially educated for that purpose, to treat disease. While the interests of the public are best subserved by such an arrangement, the physician also secures thereby his legitimate means of livelihood. A failure to accord a practical recognition to this proposition would be not only to disturb the established order of things, but also, while jeopardizing the public health, to drive competent men to other callings than that of medicine for their means of support. Anything, therefore, which encourages the layman to be his own doctor, both jeopardizes his vital interests and curtails the physician's legitimate income. It will require little argument to convince our readers that the pharmacist who places medicinal preparations in the hands of the public, thus both jeopardizes their interests and deprives the medical practitioner of his just dues. What effrontery, therefore, for such pharmacists to ask professional support! And what a kissing of the hand that smites them, for physicians to give them this support! And yet this display of phenomenal cheek on the one hand, and lamb-like submission to spoliation on the other, are being daily enacted by dozens of wholesale manufacturing pharmacists and thousands of medical practitioners, in this and other lands! When will the profession awake to a realization of the fact that it has nursed, and is even still nursing, a viper which is robbing it of its very existence? This viper would in the majority of instances, have miserably perished when it was first hatched, had it not been for the sustenance it derived from the profession which it now insidiously seeks to starve. It is bringing wealth to the pharmacists who manipulate it, while it is robbing the profession of its existence. Is it not time it were scotched?

We have now before us an interesting newspaper, called the Panama Star and Herald, which furnishes us with an apt illustration of the evil at which we have above hinted. A certain firm, not of pharmacists (to thus classify it would be to unduly exalt it), but of manufacturers, known as Scott & Bowne, have for a number of years liberally advertised in the medical journals of this country a preparation under the name of Scott's Emulsion of Cod-Liver Oil, etc. They have also, and particularly in their early history, sought the patronage of the medical profession of this country through the liberal distribution of samples and advertising literature. Under their specious claims they succeeded in securing the endorsement of a number of leading physicians, who were, doubtless, led to regard them as respectable pharmacists. In the newspaper before us we have a complete revelation of their true nature, and it would, no doubt, much interest the medical gentlemen whose names figure in the advertisement, to see the use to which they have been put in Panama. It must also give the profession of that far off clime a peculiar impression of the eminent physicians and professors, who have lent themselves to this scheme of advertising to the public this proprietary medicine. The advertisement of Scott's Emulsion in this *public* print informs us that:

"In the United States and Cuba the plain Cod-Liver Oil has given place to this valuable Emulsion to a great extent, for the reason that it seems to cover a wider field of usefulness and is instrumental in curing more diseases. Its great remedial powers are wonderfully exhibited in the *cure* of Consumption in its primary stages. Its healing and strengthening properties, together with its balsamic and soothing qualities where there is an inflammation of the throat and lungs, are seen and felt at once after commencing its use; and we will substantiate our statements by the testimonials given below, that *there is no remedy in existence* so useful and so reliable for the

Cure of Consumption,
Cure of General Debility of the System,
Cure of Scrofula,
Cure of Rheumatism,
Cure of Coughs, Colds, and Throat Affections,
Cure of Wasting Diseases of Children,
As Scott's Emulsion of Cod Liver Oil, etc.

Please read the following testimonials of physicians in the United States and Cuba, and also from some who have been cured by its healing and strengthening powers."

Here follow the testimonials of prominent physicians and professors of medical colleges of New York, Chicago, Baltimore, Milwaukee, Louisville and other places, in the same column with the certficates of certain ladies and gentlemen in whom the Emulsion had wrought the usual wonderful cures.

The public of Panama will, of course, on reading this advertisement with its extravagant claims endorsed by gentlemen occupying high professional positions in this country, not hesitate to purchase this elixir of life. Its direct purchase from the druggist ("for sale by all druggists."—*Adv.*) will also obviate the expensive necessity of consulting a physician. The physicians of Panama have, doubtless, also been solicited to give their endorsement, and probably have in many instances, as they have in this country, been duped into the commission of hari-kiri.

One of the Evils of Therapeutic Skepticism.

WE SEE it occasionally stated that the growing acquaintance with the methods of nature in disease, which results from modern research, carries with it a growing skepticism touching the value of drugs as agents of cure. We shall not undertake to discuss this proposition at this time, further than to remark that the statement is based on half knowledge. It has its origin with those who, lured by the more exact or demonstrable divisions of medicine, have devoted themselves thereto to the exclusion of a consideration of those allies which nature, in the wonderous richness of her resources, has provided for the aid of the body in her efforts to restore the equilibrium of

health, the disturbance of which is disease. A study of nature, outside of her manifestations in the human body, is the best possible antidote to this skepticism on the value of medicine.

We desire now merely to refer, briefly, to the reflex of therapeutic skepticism on the patient. The faith of the people in the power of drugs to the healing of disease, is innate and universal. The aboriginal man, as far back at least as we can trace him, had this faith in a high hegree of development, and his mental faculties were not of such an order as to justify the assumption that it was the outcome of any very exact process of ratiocination. His descendants in all times have inherited this faith, and it has not been materially disturbed by the evolution of mental capacity to which his elevation, civilization and enlightenment are directly due. It is not the more ignorant of our contemporaries in whom this faith is strongest; it is as robust in the savant (non-medical of course) as it is in the peasant. This fact is recognized by the profession, and is referred to as an explanation of the popularity of charlatanry among educated people, the legal and clerical professions not excepted, and, indeed, this same faith is not an unimportant element in the success of the most scientific treatment. Skepticism on the part of the patient in the ability of his physician to select the exact drug best suited to his particular case, seriously interferes with the best directed efforts at cure, while implicit faith in his medical attendant's ability has ensured recovery under the care of the ignorant pretender after the gravest prognosis had been made by the competent, but skeptical practitioner. Instances of this fact are of frequent occurance, and do much to bring scientific medicine into disrepute. Faith on the part of the patient is the physician's potent ally, and to weaken it is to risk both the patient's recovery and the physician's reputation.

The potency of faith as an element of cure being conceded, is it not a very questionable procedure, to say the least, for a physician to do aught to destroy it? If the physician who cannot inspire it is not qualified for his calling, what shall be said of him who prides himself on his therapeutic skepticism? No man can inspire a sentiment which he himself does not feel, and the depressing influence of the ultra scientific, so-called, therapeutic skeptic in the sick room, is a withering blight. The physician who has lost faith in the efficacy of drugs is not only guilty of unpardonable deceit, but also jeopardizes the recovery of his patient. He should, as he values honesty and has a regard for the interests of others, betake himself to some other vocation. Imagine the influence of a cowardly military leader on the troops under him in an emergency, and you may faintly conceive of the success of the therapeutic skeptic in rallying the ebbing forces of nature. No half-hearted, vacillating leader ever aroused the enthusiasm whose flood bears down opposition. The Athenians admired the eloquence of other orators, but it required the burning words born of the conviction and pure patriotism of Demosthenes, to lead them out against Philip. It is the man of convictions who in all things influences others, and the practitioner of medicine is no exception to the rule.

But the above facts by no means argue against the employment of placeboes. Their existence only gives intelligent direction to this pardonable deceit, the employment of which involves the necessity of as thorough a knowledge of medicine and as correct a diagnosis, as does the giving of a drug of the most active properties. It requires as keen an appreciation of the situation to know when to do nothing as it does to actively interfere.

Officinal *versus* Non-officinal Drugs.

OUR esteemed contemporary, the Medical Record, is so generally just, and is withal so liberal and broad-gauged in its treatment of matters of contemporary interest, that when one sees it take a position the reverse of all this, his surprise is correspondingly great. The occasion of the surprise to which we now refer is its position on the question of the employment of non-officinal drugs in medicine. A Dr. Johnson having read a paper before the late meeting of the New York State Medical Society, in which he argues that physicians should not go beyond the pharmacopœia for their therapeutic agents, our contemporary takes occasion to lend its editorial endorsement to these views. Dr. Johnson was especially severe in his condemnation of the various compounds to which the attention of the profession is being persistently asked, both through the circulars with which the country is strewn and the advertisements which the medical journals, the Medical Record not excepted, see no inconsistency in circulating with their regular issues. In this condemnation we cordially sympathize, and can go as far as our esteemed contemporary in support of Dr. Johnson on this point. We might remark here, parenthetically, that there is a very glaring discrepancy between the editorial and the advertising department of the Record on this question; that which the former condemns is a very prominent feature in the latter. The ready-made compounds put on the market under the protection of a patent, or a copy-righted name, cannot be too freely denounced by the scientific physician, but to embrace in this denunciation the samples which are introduced during the interval of ten years which intervenes between the editions of the Pharmacopœia, is an act whose folly becomes the more apparent the more carefully it is contemplated. To interdict the use of a drug until it has found a place in the Pharmacopœia is to prevent its ever finding a place there, and thus to prevent further additions to our matera medica. This statement may seem somewhat paradoxical, but it is, nevertheless, the statement of a truth. Whence do our compilers of the Pharmacopœia derive the knowledge which shall guide them in their selection and rejection of the drugs which they decree shall, during the succeeding ten years, be officinal? Most assuredly, only from their own experience in the use of them, or from that contained in reports from the profession. There can be no other source of information in the very nature of the case. But our contemporary will not permit this experience!

The fact that many drugs had for years before they were admitted to the Pharmacopœia, enjoyed the confidence of the profession, need scarcely be mentioned to emphasize the inconsistency and positive absurdity of the position of those who interdict their use until they are made "officinal." What determined the late Committee on Revision to add eythroxylon coca, eucalyptus, guarana, grindelia robusta, blue flag, witch hazel, jaborandi, thuja occi-

dentalis, black haw, and the many other remedies of more recent introduction, to the list of officinal drugs? The members of this committee were very much like the ordinary well-educated physicians and pharmacists whom we meet every day, and who have no royal road to the learning which they have acquired, and the possession of which qualified them for their important, though self imposed task.

Doubtless the righteous indignation which the proprietary compounds of late years, and for which their manufacturers have adroitly succeeded in securing a sort of quasi professional endorsement, have aroused among scientific physicians, has had much to do with bringing the so-called new remedies into the disrepute in which they are held by many of those gentlemen. It has been a part of the policy of the manufacturers of these nostrums to associate them in the professional mind with "New Drugs," and physicians who have not taken the pains to investigate the matter have been thus deceived. The classing of these nostrums with new drugs is unjust, and when it is done by a representative journal like the Medical Record, the injustice has not the plea of ignorance to shield it from condemnation.

Austrian Wines.

WE have been requested by Fr. Jac. Andres, of 37 Beaver street, New York City, to pass our judgment upon a few bottles of Austrian wines submitted for trial. While we shall make no attempt at descanting on the applicability of these wines to medical uses, the quantity submitted and the time which has elapsed since its receipt being too limited, we have no hesitancy in stating that they do not suffer by comparison with other vintages for table service. The judgment of Dr. Druiht, as published in the Medical Times, so nearly corresponds with our opinion that we reproduce it in lieu of the latter:

"The Red Vöslauer is a good, stout, full-bodied, serviceable and economical wine, as its stoutness renders it more satisfying than Bordeaux of equal price. There is no complaint of thinness, coldness or poverty; it is a good, sound wine."

"The Red Vöslauer Goldeck is a smoother, finer wine, whilst the Red Goldeck Cabinet is a much softer, more finished wine, which would be pronounced a Burgundy and might be sipped as an after-dinner wine."

"The Sparkling Vöslauer will hold its own against any champagne."

EDITORIAL ABSTRACTS AND ANNOTATIONS.

The Bromide and Iodide of Sodium vs. Like Salts of Potassium.

In an article in the Lancet of December 22d, 1883, T. J. Hudson, M. B., L. R. C. P., London, discusses the comparative merits and demerits of the bromide and iodide of sodium and potassium. He concludes from physiological experiments and clinical results that the sodium salts are to be preferred to those of potassium when it is desired through them to secure the characteristic medicinal properties of bromine and iodine on the system. Potash is very poisonous to the lower animals, producing a peculiar dyscrasia both in them and in the human subject when given for long periods in small doses. When given in larger doses for shorter periods it renders the heart's action weaker and slower, at the same time arresting arterial tension. The urine shows excess of urea and sulphates from increased metamorphosis of nitrogenized tissues, and constipation results. This is independent of the acid combination. Potash is not cumulative; it is a strong depressant and has high diffusive powers. Ringer has shown that it greatly lessens the faradic excitability of the frog's heart. Sodium, on the contrary, has little power over the lower animals, and has but slight action on the peripheral nerves, muscles or blood. It slightly increases the urine, but not its solids. It is non-depressant, and its diffusive power is less than that of potash. It is less purgative also. Ringer shows that it increases both the faradic excitability and contractility of the frog's heart and that it is only one-tenth as poisonous as potash. Because of this marked difference in the properties of their bases Dr. Hudson prefers the salt of sodium to that of potassium when he seeks to induce bromism. He proceeds to give the results of his clinical experience in the use of these two salts at the Leeds Public Dispensary. In pertussis, eighty-seven cases of which were treated, he found the best results from the bromide of potassium, owing to its greater depressant action on the cerebrum, etc., and should give it in preference, unless great weakness already exists, as in rickety children and others. In women approaching the menopause and suffering from the usual train of nervous symptoms, with abdominal and cranial pains, tinnitus aurium and flatulent dyspepsia, the sodium salt in half-drachm doses causes less depression and sinking than the potassium salt, and the dyspepsia is relieved and soon cured. In the weary muscular pains following severe straining, as after diarrhœa, the sodium salt is of great comfort, and brings on no return of the looseness, as the potash salt often does. In the various forms of headache, neuralgia and nervous excitement where a hypnotic is needed, the sodium salt in large doses is followed by little or no sign of lassitude, nor signs of weakness, as is often seen after potash. This applies also to insomnia from whatever cause arising, and to puerperal mania with great depression. Moreover, the hypnotic action not being so great as that of the bromide of potassium a larger dose (one-fifth) is always given in these cases. It is also useful in incipient and pronounced delirium tremens, also in hysteria and chorea, and is longer than potassium salt in making a decided impression when pushed in these cases. In severe cardiac cases, where pain and insomnia threaten to bring on dementia, and also in cardiac cases complicated with epilepsy, where a depressant and toxic action of the potassium salt is to be feared, fifty to eighty grains of sodium bromide may be given without affecting the heart muscle to any extent, this being given for many nights. In the irritable and palpitating heart without organic lesion, as in excessive tea and coffee drinking, and when of dyspeptic origin, the bromide of potassium is to be preferred. In epilepsy the sodium salt may be administered from eight to ten months, in his experience, with far less toxic signs, or those of depression, than complicate the action of the bromide of potassium.

The iodide of sodium was tried in syphilis and

aneurism. In the former it could be given in larger and more continued doses than the iodide of potassium, without causing the depression of spirits, feeling of misery, anorexia and irritant effects on the mucous membrane to any extent, but its action is slower, for instance on the nocturnal pains, and also those of rheumatism. It aneurism it acted far less beneficially than the potash in depressing the circulation, though never objected to on account of its taste. Its alterative power seems greater, and iodism was not present even when it was pushed to one drachm three times a day. It would also appear that the bromide and iodide of sodium are better than those of potassium if we wish for the action of the bromide or iodide only on the system, but when we desire the depressing and sedative actions to cooperate, as in pertussis, aneurism, etc., then the potassium salts are preferable, the alkali potassa contributing by far the greater share toward these effects.

Kairine as an Antipyretic.

Our list of antithermic remedies is a somewhat limited one. When we have mentioned quinine, digitalis, salicylic acid and its compounds, and the application of cold in some form, we have about exhausted our means for the reduction of temperature. Whether this paucity of such agents is to be regretted or not, will depend upon the views entertained as to the effect of febrile heat upon the system. We believe, however, that the great weight of professional opinion of to-day is in favor of the view that hyperpyrexia is *per se* dangerous, and that it is generally thought advisable in practice to reduce the body-heat when it shall have raised above 104° Fahrenheit. In view of this fact, therefore, the introduction of an agent possessing the antithermic properties of kairine will be hailed with pleasure, and all reports of the action of this drug in this connection will for some time be read with interest. We have before us clinical charts of the temperature of patients down with typhoid fever, and treated in the Boston City Hospital, by Drs. Shattuck and Draper. In one case, treated by Dr. Shattuck, the exhibition of a half gramme (7½ grains) of kairine, was followed by a reduction of three and one-half degrees. In another case, with a temperature of 104° F., eight hourly doses of a half gramme given between 7 P. M. and 2 A. M., were attended by gradual reduction of temperature until noon, when it reached the normal. After this it gradually rose again five degrees in twelve hours; then it fell steadily and rapidly, not rising again above 102° F. In another case the kairine was, through mistake, given ten times in succession, the doses being hourly and of 7½ grains each. The result was the reduction of the temperature from 101.5° to 95°, and of the pulse from 75 to 55, between 9 P. M. and 6 A. M. At 10 A. M. the temperature had risen to 103.5°, and the pulse to 108. The fall and rise were each accompanied by a chill. There was marked cyanosis and cardiac depression, and stimulants and heaters had to be freely resorted to. Three other cases are reported by Dr. Shattuck, in all of which the exhibition of the remedy was followed by prompt and pronounced fall of temperature.

In Dr. Draper's single case reported, the fall of temperature was equally marked with that which characterized Dr. Shattuck's cases.

Dr. Shattuck draws the following conclusions from his experience with kairine: The method of administering it in the case of a vigorous adult is to give half a gramme (seven and a half grains) every hour, from four to six times consecutively until the temperature falls to 100° Farhenheit, and to keep the temperature down it must be continued in smaller doses. Such administration is accompanied by free perspiration. When the medicine is omitted for two or three hours the temperature rises to the original point or higher, and this rise is accompanied by a chill, which may be regarded as an indication for renewing the kairine. An overdose causes a feeble pulse and cyanosis of lips and extremities, a condition requiring stimulants.

Experiments by Girat upon animals fixed the toxic dose of kairine at one to two grains to the pound weight of the animal. Drs. Riegel and Siefert observed the depressing and toxic effects in pneumonia with only moderate doses. That individual idiosyncrasy and physical force must be duly regarded, is sufficiently illustrated by the reports of the few cases which have been recorded. The effects of the drug are manifestly rapid, and it is found in the urine, which becomes of a dark green color about half an hour after the first dose is taken. The coloring of the urine is sometimes accompanied by a slight trace of albumen, not differing in amount from that often found in typhoid fever. Kairine seems to have a decided advantage over quinine and salicylic acid, in that it does not cause the cardiac depression which these drugs are apt to produce. Its action, moreover, is said not to be cumulative, nor is a tolerance established in the system.

Little has yet appeared on which to base any opinion as to the therapeutic properties of kairine, the reports of which have thus far been made having reference more particularly to its effect in reducing temperature.

Cider as an Antilithic.

The occurrence of vesical calculi is due to a combination of causes, the exact nature of which has thus far eluded the investigation of the physician. Doubtless the nature of the drinking water of a community, its percentage of mineral constituents, etc., are important factors in the causation of this trouble. But that they are not the sole factors is evident from the fact that stone occurs in communities in which an analysis of the water shows it to be destitute of the mineral ingredients which are supposed to enter so largely as a cause in communities where vesical calculi are unusually prevalent. It was, for instance, for a long time supposed, and indeed proclaimed by prominent members of the profession, that no case of vesical calculus ever developed *de novo* in this city of Detroit, the absence of very small percentage of mineral constituents in the water supply being an effectual prophylactic against its occurrence. Of late years, however, undoubted cases have been found to develop in patients—young children—who have never drunk of other water than that derived from the Detroit river. Hereditary predisposition, doubtless, habits of diet, etc., exert an influence in the development of calculus.

Remedies which shall act as prophylactics against the formation of calculi, or which shall favor their solution in the bladder, have always been a desider-

atum in medicine. The profession will, therefore, be somewhat surprised to learn from an article by Dr. Denis-Dumont, Surgeon-in-Chief of the Hotel Dieu, of Caen, published in the Gazette Med. de L'Algerie, and reproduced in the Journal of the American Medical Association, that cider possesses very decided anti-calculous properties. During a long experience in the hospitals of Caen Dr. Denis-Dumont was struck with the almost complete absence of patients affected with stone. The absence was not complete, because as he states, there was a few cases whose habitual beverage was wine. He found that on treating these latter with cider, they were either considerably benefitted or entirely relieved of their malady. Struck with these facts Dr. Denis-Dumont instituted a series of inquiries among the medical practitioners of Normandy, and particularly with those who practiced in localities where cider was the common and almost sole beverage. Among these practitioners he found some who had had an experience of forty years and upwards, without ever having met a case of stone. There is, of course, a hint in these facts which may point to something very valuable in this connection, and we doubt not that the American medical profession will put the claim of their French contemporary to the test.

Bromide of Ethyl and Chloroform—A New Anæsthetic Mixture.

Dr. Wm. A. Byrd, of Quincy, Ill., recommends the employment of a mixture of bromide of ethyl, chloroform and alcohol (one part of the ethyl, three of chloroform, and four of alcohol by measure), as a decided improvement over the other anæsthetic agents or combinations heretofore in vogue. The mixture is a clear solution of pleasant odor, and of a warm sweetish taste. Dr. Chas. Wesley Rook, who has witnessed the employment of this mixture in Dr. Byrd's practice, contributes an article on the subject to the Journal of the American Medical Association. He declares that Dr. Byrd's attention was drawn to the subject through the unsatisfactory nature of the anæsthetics in general use, having seen two deaths from chloroform—one occurring in his own practice—and disliking the stimulating or exciting properties of ether. Judging from the physiological action of chloroform that the greatest danger from its use lay in the extreme anæmia of the brain and nervous system; that in this condition of anæmia there was not sufficient blood carried to the nervous centers controlling the organs of circulation and respiration, to enable them to continue their functions; he thought that if he could combine with the chloroform some agent that would overcome this tendency to extreme anæmia, without impairing the antiseptic properties of the chloroform, his object might be attained. The bromide of ethyl, from its physiological properties suggested itself to him as that agent. He accordingly began a series of experiments with these two anæsthetics, the results of which led him to the adoption of the above formula. In the preparation of this anæsthetic it is believed that no new chemical compound is produced; that the ingredients, not entering into chemical union, simply form a mixture. The alcohol is added as a diluent, or vehicle for the better administration of the chloroform and the ethyl bromide. At the date of the report, November 30, 1883, anæsthesia had been produced by this mixture in ninety-eight cases, without causing any bad effects, save vomiting in three cases. The quantity necessary to induce the necessary anæsthesia depends, of course, upon the duration of the operation. A half drachm poured into an inhaler, or upon a towel, will generally be sufficient to induce anæsthesia, which may be sustained by the addition ftom time to time of half the former quantity. Recognizing the peculiarities of chloroform it is deemed advisable that the inhalation of the anæsthetic be conducted in such manner as to permit of a free supply of atmospheric air.

Manganese in Amenorrhœa.

The introduction of the permanganate of potash and its therapeutic synonym, the binoxide of manganese, about a year ago, by Drs. Ringer and Murrell, was followed by a very general employment of these drugs for the purpose indicated. The very unreliable nature of our emmenagogues was very favorable to the thorough trial of agents which were placed before the profession with the hearty endorsement of these distinguished therapeutists. Although the reports on their use have not been as numerous as might have been anticipated, they have been very uniformly of such nature as to corroborate the claims originally made. In amenorrhœa of a so-called purely functional nature, the permanganate of potash or the binoxide of manganese may now be looked upon as an agent of very pronounced merit. In cases in which the suspension of the menses is due to some constitutional dyscrasia, as phthisis, for instance, the remedies are useless, but in the irregularity occurring during lactation and after eight or ten months nursing, or in the suspension of the menses from some accidental or trivial cause, such as exposure to cold or wet, etc., these drugs have been found to be very valuable. In a recent number of the New York Medical Record, Dr. F. H. Martin contributes his experience with manganese as a stimulant of the menstrual organs, and as a remedy also in menorrhagia. He extols it very highly and relates a number of cases in which its use was in a high degree satisfactory. Dr. Skene, the eminent Brooklyn gynæcologist, corroborates Dr. Martin's views, and declares that in his experience manganese acts well when there is no organic lesion of the uterus or of the ovaries.

The permanganate of potash being very liable to deoxidation in the presence of organic matter, the skill of the pharmacist was brought into requisition for the preparation of a pill in which this danger should not occur. This liability to impairment has been overcome by the employment of an inorganic excipient, and the physician should satisfy himself that an excipient of this nature has been employed in such pills as he may have occasion to prescribe.

The Oleate of Copper in the Treatment of Freckles.

It will be remembered that the oleate of copper was first recommended for freckles by Dr. John V. Shoemaker, of Philadelphia. Dr. Borcheim, in following Dr. Shoemaker's recommendation, discovered a number of untoward effects from the use of this salt of copper, which he reported. Dr. Shoemaker,

in an article in the Journal of Cutaneous and Venereal diseases, attributes these effects to either a predisposition to furuncles in the patients in which they occurred, or to the employment of an inferior preparation of the oleate. Oleic acid as generally found on the market, is nothing more than the red oil of the candle-makers, a very impure oleic acid, containing admixtures and contaminations which can only be removed by a tedious process, and which are very apt to cause the irritation complained of. Dr. Shoemaker's report of the good effects of the oleate in freckles was based on the employment of a preparation made from chemically pure acid, obtained either by the decomposition of the sodium oleo-palmitate, freshly prepared from pure oil of sweet almonds, or pure oleate from sodium oleate, made of pure oleic acid derived from the fresh sweet almonds, and freed from palmitic acid. Such an oleic acid answers the description given of it in the United States Pharmacopœia, and should be the only kind used. Dr. S. feels sure that no unpleasant effects will occur with such oleates, if properly and judiciously used. Their price is higher than that of the oleates made from the impure material, but this should not be allowed to stand in the way of their employment. The oleate of copper is not an infallible remedy for freckles, but it will be found to be efficacious in the great majority of cases.

Guaiac in the Treatment of Acute Sore Throat.

In a recent paper read before the Philadelphia Laryngeal Society, Dr. Joseph B. Pottsdamer speaks highly of the action of the tincture of guaiac in tonsillitis and pharyngitis. He reviews the opinions of the various authorities on this use of the drug, and finds that by many of the leading writers on therapeutics it is not even mentioned, while others refer to it in terms of no very high praise. Phillips endorses its use very emphatically, declaring that given in half drachm doses (the tincture), every four hours, it appears to abate the inflammation and to cut short the disease in a remarkable manner. Morell Mackenzie and J. Solis Cohen warmly endorse its action. Dr. P. was first led to employ this treatment in 1879, after he had had a succession of trials of it in his own case. In the winter of that year he was subject to attacks of sore throat, which he found were promptly aborted by the use of the tincture of guaiac, thus strongly corroborating Mackenzie's dictum, that "we have in guaiac a remedy which, if administered at the onset of the attack will almost always cut short the crescent inflammation."

The practical deductions which Dr. P. draws from the cases which have been under his treatment, are:

1. The almost instantaneous relief from pain.
2. The improvement in deglutition which always accompanies this relief.
3. The early diminution of the swelling.
4. The short course of the disease, all of the cases having been practically well on the fourth day of treatment, if not sooner.
5. If the case comes under the treatment early enough the disease may be aborted.

Even if we agree with Trousseau and others in admitting that the disease must run its natural course, we have no right, says Dr. P., to act supinely, as by the use of guaiacum we certainly ameliorate, and as he believes, cut short the disease.

Corrosive Sublimate in Obstetric Practice.

We called attention in the January number of the GAZETTE to the importance placed by Prof. T. Gaillard Thomas on the use of corrosive sublimate as a prophylactic and curative agent in puerperal septicæmia. Dr. Thomas' emphatic endorsement of this agent left it scarcely necessary to say more touching its efficacy. We may, however, mention the fact that Dr. Kehrer, of Heidelberg, recently read a paper on this subject before the Deutschen Natur Forscher Versammlung. This paper was based upon the use of corrosive sublimate in 221 labors. In only four of these was there an urticarious eruption, beginning on the thighs and extending over the whole body. Attacks of stomatitis occurred in one lying-in woman, and in three gynæcological cases. The first however, had previously undergone a process of inunction, and the two last had been taking mercury. Kehrer first used a corrosive sublimate solution of 1 to 2000, which he afterwards increased in strength to 1 to 1400. During the labor he makes a vaginal irrigation with this solution before making a vaginal examination. As to the results of corrosive sublimate disinfection in the lying-in wards, he states while under its use that two-thirds of the women remained entirely free from fever; before such use two-thirds of them had febrile action. In the discussion which followed the reading of this paper Kuester declares himself strongly in favor of the corrosive sublimate disinfection, as a means of preventing septic fever. He found that after carbolic irrigation of the uterus the cocci did not disappear, but that their disappearance was very prompt after the sublimate irrigation.

The Treatment of Chronic Ulcers.

Chronic ulcers have been too frequently mentioned as the opprobrium medicorum. They may be found in almost every community, and the list of remedies which have been applied to their relief is a long one. Dr. Stewart contributes to the Medical Chronicle a report of several cases, detailing a plan of treatment which he has found to be successful. He lays great stress upon the necessity of improving the general condition of the patient, and iron and quinine will usually be found necessary in these cases. He applies, night and morning, a solution of carbolic acid (one to thirty or forty) to be used with a hand-ball atomizer. The spray is to be blown strongly under the edges of the ulcer and all over its surface until it has been thoroughly cleansed. No sponge or cloth must be used upon the surface of the ulcer. A cloth oiled with an ointment of vaseline and carbolic acid is to be applied to the ulcer, and then lightly bandaged. Where the edges of the ulcer are hard it may be necessary to cauterize them and to apply poultices until they are softened. The points which he particularly insists upon in the treatment of chronic ulcers are, 1st., rest to the affected part; 2nd., the use of the atomizer with an antiseptic solution to stimulate and cleanse, thus avoiding breaking down of the weak granulations in dressing; 3rd., when practicable the use of well regulated pressure with elastic bandages; 4th., the occasional use of strong stimulants to the surface of the ulcer; 5th., such internal treatment as may be indicated; 6th., to quote from the Westminster Shorter Catechism "perseverance therein to the end."

How to Take a Pill.

With many patients the swallowing of a pill is a very difficult matter. Why this should be so is somewhat difficult of explanation, inasmuch as these same patients will readily swallow a pea of the same size as the sugar-coated pill, in the deglutition of which they experience so much difficulty. Dr. Wills suggests a method in the Medical and Surgical Reporter, which he says he has used for several years with success, and which may be new to many of our readers. Having noticed that if a person at meals inclined the head backwards, as in laughing, while there was food in the mouth, he was pretty sure to be strangled from the "food going the wrong way," Dr. W. instructed those of his patients who had difficulty in swallowing pills to keep the head in the position it would occupy if they were eating and swallowing food at the table—that is, the head inclined foward and the chin near the breast, and *kept* in that position. If a small portion of saliva be on hand, or a small quantity of water taken after the pill is taken into the mouth, it will suprise the patient and gratify the doctor, he says, to witness the facility with which it will be swallowed. He has found that to direct the patient to keep his eyes on his toes while swallowing, will suceeed in keeping him from throwing his head back.

Hiccough Treated by Chloral.

Dr. Geo. C. Kingsbury reports in the British Medical Journal a very persistent case of hiccough in which a trial of all sorts of domestic remedies, including purging, vomiting and blistering the abdomen, had failed, before he was called to see the case. He supplemented these by the administration in succession of the bromide of potassium, belladonna, camphor, acetic acid, spirits of chloroform, hydrocyanic acid, fetid spirits of ammonia, morphia, oressure of the phrenic nerve and over the epigastrium, but all without effect. Large doses of morphia administered hypodermically, while producing sleep, caused no abatement in the hiccough, which was just as severe as when the patient was awake. Finally, after twelve days of incessant suffering thirty grains of chloral hydrate were given. This induced sound and undisturbed sleep for six hours, and the patient awaked free from his tormentor.

Dr. Kingsbury reports that he has had several opportunities of trying chloral since the above, under similar though less aggravated circumstances, and has always found that a liberal administration of the drug produced prompt relief.

Gelsemium in Intermittent Fever.

Dr. N. B. McKay highly recommends the employment of gelsemium in intermittent fevers, declaring indeed, that he has observed equally good results from its use with those which follow the employment of any preparation of the bark. His method of administering it is to put, say, ten drops into a teacup or tumbler, if for immediate use, and measuring in three or four teaspoonfuls of water to each drop, give teaspoonful doses of the mixture. The addition of camphor or peppermint water serves to keep the mixture sweet. Where there is much headache he administers bromide of potassium in combination. This remedy, prepared in this way, will rarely fail, he says, to quiet any nervous chill or rigor after it is fairly under way. He gives the mixture in teaspoonful doses as often as every five minutes in severe cases. Some, he says, will spurn this remedy on account of its extreme simplicity and the size of the dose, and others because of its cheapness, or other reasons. A few will try it, and not being careful about the amount, will give too much, and become disgusted with it. Those who will try it faithfully and carefully will prize it the more highly the longer they employ it. It is cheap, easy to take and very effectual.

Curari and Chloral in Tetanus.

The treatment of tetanus is far from being satisfactory, and it will become the practitioner to have his repertory well stocked against the occurrence of this grave affection. The Medical Press reproduces the report of a case by Dr. Hjorst, in the Norsk. Magaz. Fuer. Lægevidedesk, in which a three year old child received a severe crush of the calf of the leg. On the thirteenth day, prior to which the patient did well under antiseptic treatment, symptoms of tetanus suddenly developed. Morphia and chloral were administered per rectum, but without effect in controlling the symptoms. On the twenty-fifth day the child's condition seemed hopeless, when it was decided to administer a hypodermic injection of curari (one sixty-fourth of a grain), which was to be repeated, at the end of three hours, increased to one forty-eighth grain. The second dose afforded decided relief, and on the following morning one thirty-second of a grain was injected, and the patient was decidedly more comfortable. Chloral was given by the rectum at night. Spontaneous diuresis and evacuation from the bowels followed the third dose, and convalescence was gradually established.

Eucalyptus in Acute Tonsillitis.

Dr. Henry J. Huston says, in the Atlantic Journal of Medicine, he has for some time been employing eucalyptus in cases of quinzy, with gratifying results. The method of administration is to add a drachm of the fluid extract to an ounce of warm water, and employ the mixture as a gargle or spray every twenty minutes. The water must be as warm as the patient can bear it. It has been his good fortune to see all the cases thus treated recover speedily without suppuration. In this connection it would be interesting to know what share of the credit of recovery in those cases is due to eucalyptus, and what to the hot water. Recent reports in medical journals, drawn out by one by Dr. Riky, in the Medical Age, seem to establish remarkable curative properties for hot water in such inflammatory affections of the throat as can be reached by this agent.

Indian Corn in Vomiting of Pregnancy.

Some time ago an article went the rounds of the medical press claiming almost, if not quite, specific properties for pop-corn in the vomiting of pregnancy. Meeting the eye of a correspondent of the Medical and Surgical Reporter, it reminded him of a popular domestic remedy for the control of this complication. This consists of the charred kernels of the common Indian corn, made into an infusion. A sip of this infusion, either cold or warm, is taken

when the feeling of nausea sets in, and the correspondent declares that in every instance in which he has seen it employed, the result has been satisfactory. While not considering it a specific he holds that it should constitute one of the arrows with which the physician's quiver should be supplied in this peculiar and obstinate affection.

Strychnia for Uterine Inertia.

The Medical and Surgical Reporter quotes from a report in the Journal de Med. de Paris, in which strychnia is recommended as a substitute for ergot in parturition. When the cervix is dilated and there is uterine inertia, a dose of the 1–130 of a grain of the sulphate of strychnia is to be given every ten minutes, the interval between the doses being increased as the head descends. Dr. Deghilage, who contributes this report, gives strychnia thus administered the preference to the forceps, the expulsive pains being very effective, and hemorrhage being less likely to supervene than when the instruments are employed.

Cimicifuga in Epileptiform Nightmare.

Dr. H. C. Wood having contributed to the Medical Times a clinical lecture on the subject of epileptiform nightmare, Dr. Edward M. Small, of Eastport, Me., reports in the same medium an almost identical case with his results in its treatment. In Dr. Small's case the effect of half-teaspoonful doses of powdered cimicifuga racemosa (black cohosh) given at bedtime was most satisfactory. The paroxysms at once ceased, and there has been no return in a lengthy period of observation, The only additional treatment was an order to partake of only a very light supper each night.

Book Reviews and Notices.

The Dissector's Manual. By W. Bruce-Clark, M. A., M. B., F. R. S., Senior Demonstrator of Anatomy and Operative Surgery at St. Bartholomew's Hospital; Examiner in Anatomy to the University of Oxford; Surgeon to St. Peter's Hospital and Assistant Surgeon to the West London Hospital; and Charles Barrett Lockwood, F. R. S., Demonstrator of Anatomy and Operative Surgery at St. Bartholomew's Hospital and Surgeon to the Great Northern Hospital. Illustrated with 49 engravings. Price, $1.50. 12 mo., p. 390.

Surgical Applied Anatomy. By Frederick Treves, F. R. C. S., Assistant Surgeon to and Senior Demonstrator of Anatomy at the London Hospital; Examiner of Anatomy at the London Hospital and at the University of Aberdeen; Wilson Professor of Pathology Royal College of Surgeons, England. Price, $2.00. 12 mo., p. 532.

Elements of Surgical Pathology. By Augustus J. Pepper, M. S., M. B., Lond., F. R. C. S., Eng. Fellow of University College, London; Surgeon to St. Mary's Hospital and Teacher of Practical and Operative Surgery at the Medical School. Illustrated with 81 engravings. Price, $2.00. 12 mo., p. 530.

Elements of Human Physiology. By Henry Power, M. B., Lond., F. R. C. S., Ophthalmic Surgeon to St. Bartholomew's Hospital, London; Examiner in the Board of Anatomy and Physiology, Royal College of Surgeons. Illustrated with 47 engravings. Price, $1.50. 12 mo., p. 389.

Philadelphia: Henry C. Lea's Son & Co.
Detroit: Phillips & Hunt.

The above constitute a part of a series of student's manuals issued by the house of Henry C. Lea's Son & Co., of Philadelphia. They are handsomely bound in red cloth, with red edges, printed with clear type on a fair quality of paper. Each volume has an index. The illustrations are sufficient in number, but their quality could have been enhanced had the engraver taken a little more pains with his work, or occupied more time in their manufacture.

Our readers are all well aware how we have discouraged the publishing of this class of medical literature, and the reasons given therefore. Nevertheless we feel obliged from an examination of this series to somewhat relax our former expressed opinions and extend to them a greater meed of praise. Of course they are written and published in the interest of the student and we see no reason why they should not be acceptable to him. The "Dissector's Manual" and "Applied Anatomy," are condensations from larger works on those subjects, and are unexceptionable. "Human Physiology" will have, we fear, a tendency to belittle the subject, and when he has read it once the student will arrive at the conclusion that physiology is "not much after all," whereas it occupies one of the most prominent chairs in the curriculum of medical education. It is more fitted for the general reader than for the student of medicine.

"Surgical pathology" has its merits and demerits. The reason is obvious; the author has endeavored to put too much in too small a space and hence has not been able to make himself clear enough for the neophyte's comprehension.

The author in order to be concise is compelled to use terms, which, although in themselves comprehensive, necessarily greet the young readers with an idea of his great learning. At the same time he can read scarcely any section without a Dunglison's Medical Dictionary at his hand. If manuals are essential to the student they should be written in the plainest of style. Technical words should be avoided and although the subject would be thereby extended, the time of the student would be saved and his understanding of the subject enhanced.

It is much easier to find a blemish than to remove one. We have stated what we think are such. Yet so much good can be had from these books that we cannot withhold our expression in their favor. We therefore cordially commend them to the student, and they may also serve as a remembrancer to those who have neither the time nor the means to procure more extended works on the subject.

The Field of Disease, a Book of Preventive Medicine, by Benjamin Ward Richardson, M. D., LL. D., F. R. S., Fellow of the Royal College of Physicians, and Honorary Physician to the Royal Literary Fund.

"Homines ad deos nullâ de propius accedunt
Quam salutem hominibus dando."—*Cicero.*

Philadelphia: Henry C. Lea's Son & Co.
Detroit: Phillips & Hunt; (late John Willyoung).

The author informs his readers in his preface "that he has written this work for those members of the intelligent reading public, who, without desire to trench upon the province of the physician and surgeon, or to dabble in a science and art of medical treatment of disease, wish to know the leading facts about the diseases of the human family, their causes and prevention. Any one, therefore, who opens this book with the expectation of finding in it receipts and nostrums will not have that expectation fulfilled and will discover no remedies except such as are purely preventive in character."

With this claim of the author we have examined his work. It is divided into three books. Book I treats of diseases; part 1st, General Diseases Affecting Mankind; second, Local Diseases; third, Diseases from Natural Accidents,

Book II, Acquired Diseases; Diseases of Artificial Origin, Phenomena and Course. Part 1st, Acquired Diseases from Inorganic and Organic Poisons. Part 2d, Acquired Diseases from Physical Agencies, Mechanical and General. Part 3. Acquired Diseases from Mental Agencies, Moral, Emotional and Habitual.

Book III. A Practical Summary of the Origin, Causes, and Prevention of Disease. Part 1st. Origin and Causes of Disease. Part 2d. Practical Summary of Prevention of Disease.

Our readers will see from the above statement of the matters discussed by the author, that it is semi-professional, book one being in the interests of the profession, while book two and three have more interest for the public. Indeed the American publisher informs its readers that while the author "Assumes that the volume is intended primarily for the public, the publishers have no hesitation in laying it before the profession, as it contains much with which every physician should be familiar."

Book 1st, in so far as the public are concerned, is more purely professional and hence is of more interest to the medical man. In a book for public reading, this part, we opine, should have no place. It is the matter contained in books II and III which should command their consideration. There are many things which concern the human body to which the trite old adage is very applicable, viz: "A little learning is a dangerous thing, drink deep or taste not the Pierian spring." Natural diseases, or those arising from organic or functional causes, the public can practically have no power over or control; their management and cure must lie in the hands of the educated physician. With induced or acquired diseases there is much in which the public should be informed, and, in so far as the author presents the considerations of books II and III to them, he has done so not only as a matter of information, but as an instructor. Our space does not permit us to give examples or quotations. Our readers can form their judgement from the contents already given. The whole of the book is of more than ordinary interest to the profession, and so much as is written for the public is of great value to them. To both the profession and the public we commend the book but the better the public who read it are educated the greater will be their appreciation of it. It is elegantly and substantially issued by its publishers.

A Treatise on Pharmacy.—Designed as a Text-Book for the Student and as a Guide for the Physician and Pharmacist. Containing the Officinal and many unofficinal Formulas and humerous Examples of Extemporaneous Prescriptions. By Edward Parrish, late Professor of Theory and Practice of Pharmacy in the Philadelphia College of Pharmacy; Member of the Academy of Natural Science of Philadelphia; and of the American Pharmacentical Association. Fifth Edition. Enlarged and thoroughly revised by Thos. S. Wiegand, Graduate of the Philadelphia College of Pharmacy. With Two-hundred and Fifty-six Illustrations.

Philadelphia: Henry C. Lea's Son & Co.
Detroit: Phillips & Hunt, 189 Woodward Avenue.

Our readers are, doubtless, all well acquainted with this work of Prof. Parrish. No question, to our knowledge, has ever arisen against its correctness or its character. All previous editions having been exhausted, the demand for the work was imperative. The death of its author (Mr. Parrish), having taken place, and owing to the late revision of the U. S. Pharmacopœia, it became a necessity that this treatise should also be revised, and that duty was delegated by the publisher to Mr. Thos. S. Wiegand, a graduate of the Philadelphia College of Pharmacy. That this duty has been well performed the 5th edition, now before us, amply testifies. The advance in chemical and pharmaceutical science, the new preparations of the pharmacopœia, with its lists of chemical and officinal compounds, and the system of parts by weight in place of definite quantities and the omission of obsolete terms in the former volume have rendered the task one of great labor.

The arrangement of the work has been improved, thus facilitating reference and avoiding repetition.

The syllabi, which proved so valuable a feature in former editions have been retained, many having been re-written, and others added. All new remedies of interest have been added, and in the chapter on elixirs some new formulas of much popularity have been given. No labor or pains have been spared by either editor or publisher to make the work as nearly perfect as possible. As a work for the student of pharmacy it is invaluable, and to the practitioner who has to rely upon himself in the preparation of his drugs for the use of his patient, it is just what he wants.

It seems only necessary that we call attention to the fact that a new edition is issued, for so well is the work known that comment on our part is absolutely unnecessary.

The International Encyclopædia of Surgery.—A Systematic Treatise on the Theory and Practice of Surgery. By Authors of various nations. Edited by John Ashhurst, Jr., M. D., Professor of Clinical Surgery in the University of Pennsylvania. Illustrated with Chromo-Lithographs and Wood cuts. In Six Volumes. Vol. IV. 1884.

New York: Wm. Wood & Company.

This volume contains the discussion of Injuries and Diseases of Various Tissues, and begins the Surgery of Regions, containing articles on Injury of Bones, Diseases of joints, Excisions and Resections, Tumors, Injuries of the Back and Malformations and Diseases of the Spine.

Injuries of the Bones, by John H. Packard, M.D.; Diseases of the Joints, by Richard Barwell, F. R. C. S.; Excisions and Resections, by John Ashhurst, M. D,; Excision of the Knee-joint, by Geo. E. Fenwick, M.D., C.M.; Tumors, by Henry Trentham Butler, F. R.C. S.; Injuries of the Back, by John A. Sidell, A. M., M. D.; Malformations and Diseases of the Spine, by Frederick Treves, F. R. C. S.

This volume contains over 960 pages of reading matter, with a full index, and in it are discussed the subjects already alluded to, and by gentlemen well-known to the medical profession, at home and abroad, as having given particular study to the subjects upon which they have individually written.

The great value of this great work on surgery becomes the more apparent as each volume is issued, and with rare exceptions the authors are still living in the active practice of their profession. It is evidently a work no medical library can be complete without, and being issued as it is, the reader has an opportunity of giving it a closer examination than though the whole set were issued at once, besides as the payment can be made by the volume it is the

more easy of purchase for those of more limited means.

We have examined this volume with more than ordinary interest, and it is a matter of surprise that o much can be practically written on the subjects contained therein. The illustrations are good and are all that is necessary for their purposes. It is printed on substantial paper and well bound.

Veterinary Medicine and Surgery in Diseases and Injuries of the Horse. Compiled from Standard and Modern Authorities and edited by F. O. Kirby. Illustrated by four color plates and one hundred and sixty-eight wood engravings.

New York: Wm. Wood & Co.
Detroit: J. MacFarlane.

This volume comprises the December number of Wood's Library for 1883, and is a worthy companion of the valuable series comprehended in this library. But few men are more interested in the sufferings of their families than they are in horses, provided the latter are considered valuable, and no animal is of more consequence to the medical man than his horse. Standing as he does at the head of the animal race, his diseases and injuries approximate nearer to those of man than any other animal. For these reasons we hail with pleasure any work that will advance our knowledge of the diseases, injuries and their treatment of this valuable animal. We have given the study of the horse and his diseases and injuries considerable attention, and we feel much pleased with the views of the author of the book before us. Although a compilation, the author has shown good judgment in its arrangement, and thus places before his readers a concise and practical work on veterinary surgery. A close inspection shows many important little things left out, but the author's excuse might lay in his necessity of keeping his volume within the bounds of 350 pages. We are pleased that this work is one of the series, and to no one can it be more valuable than to the physician, whose horse is his daily and nightly companion and upon whose stability and faithfulness depends not only his daily bread, but often the lives of his patients. We cordially commend it.

A Manual of Practical Hygiene. By Edmund A. Parkes, M. D., F. R. S. Late Professor of Military Hygiene in the Army Medical School; Member of the General Council of Medical Education; Fellow of the Senate of the University of London, Emeritus Professor of Clinical Medicine in University College, London. Edited by F. S. B. Francois De Chaumont, M. D., F. R. S., Fellow of the Royal College of Surgeons, Edinburgh; Fellow and Chairman of Council of the Sanitary Institute of Great Britain; Professor of Military Hygiene in the Army Medical School. Sixth Edition, with an Appendix giving the American practice in matters relating to Hygiene. Prepared by and under the supervision of Frederick N. Owen, Civil and Sanitary Surgeon. Vol. II.

New York: William Wood & Co., 56 and 58 Lafayette Place.

Detroit: John MacFarlane.

This is the November number by the series of Wood's Library of Standard Medical Authors, and completes the subject of Practical Hygiene of Parkes.

We took occasion, when the first volume was issued, to express our gratification at the selection of this valuable work for the Library, and was only sorry that it could not be had without purchasing the series for the year. This, the second volume, maintains the standard of the first. Our space does not permit us to enter upon a detailed description of the work. Suffice it to say that every sanitarian should possess a copy, which, if studied, would avoid much of the clashing that now exists amongst this class of humanitarians. In fact they would learn that much of what they think is new, has been, before their day, fully examined and laid aside as futile.

Hand Book of Eclampsia, or Notes and Cases of Puerpera Convulsions. Comprising all the cases which have occurred during the present century within a radius of several miles around Avondale, Chester County, Pennsylvania, so far as can be ascertained. By E. Michener, M. D., J. H. Stubs, M. D., B. Thompson, M. D., H. B. Ewing, M. D., and E. Stebbins, M. D.

Philadelphia: F. A. Davis

The object of this little handbook is to aid the young *accoucheur* and forewarn him against this formidable disease, and to aid him in warding it off, and also to instruct him in its treatment when it does take place.

The usual text-books on the subject give the treatment in such cases but the chief object is to re-introduce blood-letting as the only safe method in its treatment. To this doctrine we cordially give our assent. There is no one other remedy that can compete with it, and even it often fails to save the life of the sufferer. Chloroform is the only substitute, and even that has its dangers. The reasons for the old plan of treatment in preference to al. others are well set forth, and we cordially commend it to our readers for examination and study.

On Bedside Urine Testing. Including Quantitative Albumen and Sugar. By Geo. Oliver, M. D., Lond., Member of the Royal College of Physicians of London, etc., etc. Second Edition.

London: H. K. Lewis, 136 Gower st., W. C., England.

The plan of the author is to facilitate urinary examination at the bedside by means of what he calls "test papers," which he claims possess the recommendation of quickness and simplicity. He recommends the potassio-mercuric iodide as the most sensitive test known for albumen. For the qualitative estimation of sugar he recommends test papers prepared by indigo-carmine, as the best. He also claims by means of test papers, to determine the quantity of both albumen and sugar in the urine. He gives the mode of testing in each case, qualitative and quantitative, and also the apparatus required for the bedside examination, and which is very simple indeed.

The American Medical Digest of Current Medical Literature. Published in monthly parts. Edited by John C. Lester, A. M., M.D., assisted by Drs. Skene, Mathewson, Fox, Jewell, Shaw and Sturgis. Jan. 15, 1884, Vol. III, Part I. $2.00 per annum.

New York: H. Campbell & Co. publishers, 142 Nassau St New York City.

This journal is made up of bibliography of current medical literature, abstracts and reviews in four parts, medicine, surgery, diseases of Women and children, and obstetrics. The number before us is a valuable one, and does credit to both editors and publishers. As this is the commencement of the third vol. it has evidently come to stay.

The Parent's Medical Note Book. Compiled by A. Dunbar Walker, M. D., C. M.

London: H. K. Lewis, 136 Gower st., W. C., England.

The object of this little work is to enable parents to keep a record of the diseases through which their children have passed. It is ruled and headed for this purpose, and if it could be generally adopted, would prove of much value, not only to the medical attendant but also to the statistician. We doubt very much if it could be brought to use in this country

PAMPHLETS AND NEW JOURNALS.

International Review of Medical and Surgical Technics.—Official organ of the American Association of the Red Cross. Published quarterly. No. I, Vol. I. Edited by Joseph H. Warren, A.M., M. D., and others. Boston, Mass., 51 Union Place.

The practical object of this journal is to inform the profession of the many new mechanical appliances. It is more particularly interesting to the surgeon and operator. We extend to it our best wishes.

The Monthly Homœopathic Review.—Edited by Drs. Pope, Dyce, Brown & Kennedy, London, Eng. G. Gould & Son, 59 Moorgate St., Publishers. Vol. xxviii, No. ii.

The Publishers Bulletin.—New York. Jan. 1884. Vol. I, No. I.

This is an illustrated quarto sheet, and presents on its outside the photographs and biographies of some of the most eminent men of the day. We wish it success.

The Archives of Pediatrics.—A monthly journal devoted to the Diseases of Infants and Children. Edited by Wm. Perly Watson, A. M., M. D., Physician for Diseases of Children to the Central Dispensary and Assistant to Christ's Hospital, Jersey City, N. Y. $3.00 per annum in advance. Vol. 1, No. I.

This is a very neat journal of sixty-four pages, and is devoted to the diseases of children. The initial number speaks well, and we wish our brother success in his undertaking. One peculiarity of this journal is, that it eschews all advertisements and throws itself upon the medical profession for its support. We therefore ask of our readers that they subscribe for it.

The Analectic.—A monthly periscopic summary of the Progress of Medical Science. Edited by Walter S. Wells, M. D. Vol. I, No. I. $2,50 per annum.
New York: G. P. Putnam's Sons,
27 and 29 23rd st., west.

This is a very handsome journal of forty-eight pages. Monthly. As its name indicates, it will furnish its readers with the latest information on medical matters at home and abroad. The fact that it is published by the Putnams means that it has come to stay. We extend to it the hand of brotherly fellowship, and wish it the best of success.

Annual Address, Delivered before the American Academy of Medicine, at New York, October 10, 1883, by Henry O. Marcy, A. M., M. D., President of the Academy.

The subject was the "Recent Advance of Sanitary Science," and which was presented to its hearers as only Dr. Marcy could do. The address was purely scientific and merited the thanks so freely extended to their distinguished president.

International Review of Medical and Surgical Technics. Official organ of the American Association of the Red Cross. Published quarterly. Edited by Joseph A. Warren, A. M., M. D., Charles Everett Warren, M. D., and William Everett Smith, M. D.
Boston, Mass.: Published by the International Medical Exchange, 51 Union Park. Vol. I, No. I. pp. 130.

This is a new enterprise in the line of medical journalism, and its first issue is a very creditable one. Our best wishes go out for its success.

Fourth Annual Report of the Central Council of the Detroit Association of Charities, with papers of interest to the public in relation of the welfare of the dependant classes. 1883. Detroit, Mich. Issued 1884.

Illustrated Medicine and Surgery. Vol. II, No. iv. October 1883. Edited by George Henry Fox, M. D., Clinical Professor of Diseases of the Skin, Col. Phys. and Surgeons, N York, and Frederick R. Sturgis, M. D., Prof. of Genito-urinary Diseases, Post Graduate the Medical School of New York. With the Co-operation of Distinguished members of the Medical Profession of New York City.

Fracture of the Neck of the Femur. With Special Reference to Bony Union after Intra-capsular Fracture. By N. Senn M. D. of Milwaukee, Wisconsin. Extracted from the transactions of the American Surgical Association. Vol. I. Philadelphia: 1883. Illustrated.

Excision of Portion of the Intestines. By James Bell, M. D., Medical Supt. of the Montreal General Hospital. Read before the Canada Medical Association at Kingston, Sept. 1883.

Our thanks are due the Secretary of the State Board of Health for copies of the Proceedings of the Sanitary Conventions for the year 1883, held at Pontiac January 31st and February 1st, and at Muskegon August 23d and 24th. We should judge from the attendance that the resident communities of the above cities were very much interested in the papers and discussions thereon, and hence information is gained which they could not obtain elsewhere. Outside of those particularly interested there is but little, if anything, new in the addresses and discussions, to those who keep posted. However the keeping up of these conventions will do no harm if they do not do much good.

Our thanks are due to Messrs. Waring & Williams, No. 79 William Street, New York City, for a chart of On Chemical Notations. Compiled from a paper read by Prof. H. Carrington Bollou, before the New York Academy of Sciences.

New Remedies.

The Comparative Value of the Newer Tests for Albumin in Urine.—Although the mere presence of albumin in urine can no longer be regarded as anything further than presumptive evidence of damaged kidneys; yet, it has so long formed the basis upon which the diagnosis of renal pathology has been constructed, and, moreover, as an element considered with other symptoms it still holds, and is likely to hold, an important place at least in preliminary investigations of renal disease. Therefore, all matters concerning the most reliable and ready methods of detecting the presence of albumin in urine must remain of practical interest and importance to the general practitioner. Much attention has been given of late to several newly proposed agents for detecting albumin in urine, both in this country and in Europe. Some of these, it has been claimed, are so exceedingly delicate in reaction as to detect the presence of albumin when the older methods, as by heat and nitric acid, failed to do so completely. Furthermore, most of these agents have been indorsed by some of the best authors on renal diseases both here and abroad.

The general practitioner may, in consequence, encounter some confusion in deciding whether it be wise to accept the newer and readier methods or adhere to the older and long tried agents already in use. It is proper that we should carefully inquire into the relative value and reliability of the newer, as compared with the older tests, with the view of assigning to each their proper spheres in the routine of daily work.

First, then, we shall note the acidulated brine test, brought forward by Dr. Roberts in the Lancet, Oct. 14, 1882. It is prepared by mixing together a fluid ounce of diluted hydrochloric acid with a pint of water, saturating with chloride of sodium and filtering. It is claimed to be more delicate than Heller's

test. It does not discolor the fingers or destroy the clothing in case it be spilled, and after a specimen of urine has been tested by brine for albumin, the same specimen may be tested for sugar by Fehling's test.

Picric acid was first brought forward by M. Ghllipe in French current literature in 1872. Dr. G. Johnson more fully discussed its merits in the Lancet in Nov., 1882, as does also Dr. Pavy. Several articles appeared in that journal on the subject about the close of 1882 and the early part of 1883. The test solution is made by saturating boiling water with picric acid, and it may be applied by the contact method, viz.: by allowing the picric acid solution to flow down a glass rod, or pipette, over the surface of the urine, which latter must be previously treated with saturated solution of citric acid. If albumin be present, a white cloud is perceptible at the junction of the two fluids.

Tauret's test, or the potassio mercuric iodide solution, may be prepared as follows: potas. iodide 3.22 grammes, and hydrargyri bichloridi 1.35 gramme, are added to 100 cc. of distilled water and filtered. This salt was first proposed as a test for albumin by Tauret, of Troyes, in 1872. Mr. Guy Neville Stephen first called attention to its comparative value in the London Lancet. Its method of application is essentially the same as that of picric acid, previously having acidulated the urine with citric or acetic acid. It is claimed to be more sensitive in reaction with albumin than heat and nitric acid, that it is cleanly to handle, very permanent, and almost perfectly clear in solution.

Sodium tungstate was first proposed as a test for albumin by Dr. G. Oliver, of Harrowgate, in the London Lancet, Feb. 3, 1883. His method of preparing the test solution is as follows: a mixture of equal parts is made of saturated solutions of sodium tungstate (one in four) and of citric acid (ten in six) in water. It is claimed to be "an albumin precipitant of great delicacy, devoid of objectionable qualities."

Dr. Oliver also proposes in the same number of the Lancet as a test for albumin, the potassio mercuric iodo cyanide, but as this is practically the same test as the one last described, it is needless to consider it further.

Potassium ferrocyanide test is simply a saturated solution of the above salt in water. Its application is made by previously acidifying the urine with acetic acid, and adding the ferrocyanide solution, when, if albumin be present, a white cloud is at once formed. This was proposed by Bödeker as a volumetric test for albumin. Dr. Pavy proposed subsequently to make the test with citric, instead of acetic acid, and he also introduced the pellets (compressed) of sodic ferrocyanide and citric acid, which are simply crushed and placed in a test tube containing the suspected urine, agitating without heat.

Dr. Oliver first prepared all of these tests, save brine, in portable form, so that they could be carried in the pocket-book, and applied at the bedside of the patient. His method consisted in saturating chemically inert filtering paper with the test solutions, and cutting the papers into small strips. An acid paper was also prepared by saturating filtering paper with strong solution of citric acid. The application of these tests is as follows: A small test tube is used, with a capacity of say 60 minims. This is filled about half full of the suspected urine, and a citric paper is rolled up and thrown into the tube. After agitating for a minute or so, one of the other papers is added, say the potassio mercuric iodide, or ferrocyanic, and if albumin be present, a white cloud at once forms about the last paper introduced.

Dr. Oliver has also prepared what he terms the compound papers, made by joining together a citric paper with one of the others. This simplifies the application of the test, inasmuch as but one paper need be used in testing. A full account of these test papers, and their application, is best told in Dr. Oliver's own words, which is done in the London Lancet, Jan. 27 and Feb. 3, 1883, or in a small book issued by himself on "Bedside Urinary Tests."

The carbolic acid test, in any of its forms, I have not used, for reasons which will become obvious to any one who tries it in detecting the smaller traces of albumin.

The above, then, in the main, are the newer tests proposed for detecting albumin in urine. It is proper that we next inquire into their advantages and disadvantages, in order to properly estimate their relative values. What I shall say upon this point is the result of a series of experiments with all of these agents, extending over the past eight months, or perhaps a little longer.

As to the test papers, Messrs. E. H. Sargent & Co., 125 State street, Chicago, kindly prepared, at my suggestion, about ten months ago, all these papers, according to Dr. Oliver's method; and as they have been in stock since, they may be procured by any one desiring to try them for themselves. I also procured, about eight months since, through Mr. Hawksley, 357 Oxford street, London, two complete series of Dr. Oliver's own papers, for the purpose of trial; and with all these, I have made careful and repeated experiments. I prefer the potassio mercuric iodide and tungstate papers to all others.

The most serious objection, perhaps, to all these newer tests, is the fact that they give a reaction with other matters, occasionally present in the urine, such as peptone, mucin, parapeptone, and urates, and, moreover, if the patient be taking certain of the vegetable alkaloids, (notably quinine,) or oleo-resins, or some of the alkalies, or even alcohol in considerable quantities, before the urine is voided, a similar reaction occurs, none of which are distinguishable from albumin precipitate, without the additional employment of heat to the test; and the latter in some cases decomposes the test solution, (notably the ferrocyanic).

I think it may be laid down as a rule, to which I at least know of no exception, that no test for albumin in urine is absolutely reliable unless combined with or followed by heat. At a temperature of 72° to 75° C. serum albumin coagulates and becomes insoluble in acid solutions; and if of any quantity, the insolubility is perceptible in clear solutions in the formation of a more or less opaque cloud. I know of no other bodies met with in the urine, if that fluid be clear, and acid in reaction, which will give a similar reaction.

Of course, in dealing with urine where the amount of albumin is large, most of the ordinary tests are sufficiently accurate to determine its presence beyond reasonable doubt; because phosphates, urates, peptones, mucin, bacteria, or other bodies, which may give a precipitate simulating closely albumin, are almost never present in sufficiently large quantities to throw down a coagulum of the density, appearance and extent of albumin, when present even in moderately large quantities. And hence in those precipitates, filling, say a third, or half of the test tube, we are reasonably safe in assuming at least that albumin is present, whatever else may be also, though the reaction be brought about by most any of the tests in ordinary use.

As to the brine test of Dr. Roberts: it is cleanly, does not soil the hands, or clothing, keeps well, is easily applied, and is a very delicate reagent. In testing for very small traces of albumin, however, it is inferior to two or three others, and one reason for this may be, that it requires so large a quantity of the solution to cause a reaction, that it very much dilutes the urine, rendering detection of albumin in small quantity more difficult.

The sodium tungstate test does not stain, is very clear (the most so of all); its reaction is a little slower than some of the others, but extremely delicate, and properly applied is one of the best of all. It will not answer to apply this test as some of the others are done, namely, to acidify the urine first, and then add the tungstate solution, because an excess of the tungstate may get into the urine and render it inoperative, for it must not be forgotten that tungstate of sodium solution in excess in the presence of an acid dissolves

both egg and serum albumin. We must thus use the test solution, as advised by Dr. Oliver, already described, to make it reliable.*

The picric acid test seems to have excited more discussion than any of the others. It will quickly react with albumin in small quantities, but it has some serious drawbacks for general use. If allowed to mix with the urine (and it is not always possible to prevent this) it colors that fluid yellow, which is unfavorable for detecting faint traces of albumin. Again, if picric acid comes in contact with the fingers (and it often does in manipulating) it leaves ugly stains behind for many days.

In a paper on the "Clinical Diagnosis of Bright's Disease," which I presented to the Chicago Medical Society a year ago, I mentioned that I had been in the habit for years of estimating the approximate quantity of albumin in urine by the potassio ferrocyanide solution and acetic acid. Subsequent use in my hands shows that it much less frequently produces a precipitate with other bodies than albumin, in comparison to the other newer tests.

My reasons for using this test so much in daily work are as follows: In addition to being a fairly sensitive test, as to presence of albumin, it is a fair working volumetric test. I do not mean by this that it is to be absolutely relied upon as an accurate volumetric test, but rather that it will indicate sufficiently accurately the relative amount of albumin from day to day to make it valuable as a ready method of comparison in following cases of albuminuria. In using the test, I use a graduated tube, and as the albumin subsides to the bottom after a few hours (twelve) its quantity by bulk may be read off from the scale on the side of the tube and noted at each examination. I now do not use this solution in detecting the presence of albumin, because, in doubtful cases, the test can not be corrected by heat; the latter at once decomposes the ferrocyanide salt with an acid, liberating hydrocyanic acid, and producing a white turbidity in the solution, which might be taken for albumin.

The potassio mercuric iodide solution is an extremely delicate test (about equal to tungstate), very quick in reaction, almost clear (slightly bluish), keeps well, and is readily applied.

I have noted one objection which the tungstate does not possess, namely after the test is applied, it cannot be set aside and examined again satisfactorily. This potassio mercuric salt, in the presence of an acid, soon begins to decompose, liberating free iodine which discolors the solution and renders faint traces of albumin difficult to distinguish. This does not so materially detract from the value of the test, as the reaction is not immediate, and it is slow.

Now as to the relative sensitiveness of these tests. Dr. Oliver says, "as a result of many observations and experiments, that in his opinion, one part of albumin may be discovered in 20,000 by the iodo mercuric, picric and tungstate tests; in 10,000 to 12,000 by the ferrocyanide and brine tests, and in 6,000 to 7,000 by the heat and nitric acid tests."

The following are the details of some of my experiments, made with the view of satisfying myself on this point:

The urine of one of my patients who was convalescing from acute Bright's disease, was subjected to experiment. The urine, when experimented upon, contained a trace of albumin, was acid in reaction, sp. gr. at 60° F. was 1022, and contained a few epithelial casts.

1. On the undiluted urine all tests showed the presence of albumin.

2. 50 cc of the urine was diluted with 50 cc of distilled water, and the following noted. Reaction still apparent with all tests.

3. 50 cc of the above was diluted with 50 cc of distilled water, and the following noted. Reaction perceptible with mercuric, tungstate and picric tests. The others were negative.

4. 50 cc of the above was diluted with 50 cc of distilled water, and the following noted. Mercuric and tungstate test showed faint change; all the others were negative.

The urine of a patient under my charge, who was suffering from slight chronic nephritis (parenchymatous) was next subjected to experiment. The urine, when experimented upon, was normal in appearance and reaction at 60° F., sp. gr. was 1025. A slight trace of albumin was present. The microscope showed a few granular casts and renal epithelium.

1. On the undiluted urine all the tests gave reaction, showing presence of albumin.

2. On diluting 50 cc of the urine, with 50 cc of distilled water, the following was noted. Mercuric, picric and tungstate tests gave reaction. The other tests were negative.

3. 50 cc of the above was diluted with 50 cc of distilled water, and the following noted. The mercuric and tungstate tests still gave faint turbidity. The other tests were negative.

4. 50 cc of above was diluted with 50 cc of distilled water, when all the tests failed to show any change whatever.

The urine of a patient, who was suffering from chronic interstitial nephritis (granular atrophy) was subjected to experiment. Having been under my charge for a year and a half, I knew his urine to average a small amount of albumin (6 to 8 per cent. by bulk) and to contain a few hyaline casts, sp. gr. (at 60° F.) ranged from 1008 to 1018, and reaction usually neutral or alkaline.* It was the latter when experimented upon.

1. Observations on the undiluted urine showed presence of albumin by all tests.

2. 50 cc of the urine was diluted with 50 cc of distilled water, when all tests still showed presence of albumin.

3. 50 cc of above was diluted with 100 cc of distilled water, and the following was noted. Mercuric, tungstate and picric tests showed faint reaction. All others negative.

4. 50 cc of above was diluted with 50 cc of distilled water, and all tests failed to show any perceptible change.

These experiments, and in fact all my experiments, were conducted with the same quantity of urine or solution operated upon in each case, and similar size and make of test tubes were used in all cases. Now with reference to the reaction of certain of these newer tests in dilutions beyond the point where heat and nitric acid fails to give any change. Is this reaction albuminous? If it be albumin in minute traces, which these so-called more delicate tests show, where heat and nitric acid fail; it would go far towards proving what Gubler first suggested, in 1865, and afterwards Ultzman, in 1870; and J. Vogel, in 1873; and Johnson, of London, in 1883: namely that traces of albumin may be a constituent of normal urine. While I know of no reason why traces of albumin (probably untransformed) should not be present in normal urine (as sugar is now known to be), if, as M. Leubet† claims repeatedly, to have found it present in cutaneous sweat. But before accepting the above as fact, it must first be shown conclusively that certain substances known to exist in urine, closely allied to albumin, are not the ones which these newer tests give reaction with instead of albumin. Bence Jones refers to a peculiar case of this kind.‡ Baylon describes an albuminoid substance under the name of albuminose, which is said to occur also in normal urine. Peptone-like bodies were found by O. Schultzen and L. Reiss in urine

* I have observed that by previously heating the albumin solution to 212° the tungstate in excess will not dissolve it afterwards.

* Autopsy since showed both kidneys contracted and granular; the left weighed 2½, and the right one less than 2 ounces.

† Virchow's Archiv, Band 48, p. 181.

‡ Annalen A. Chem. u. Pharm., Band 67, pp. 97 to 105.

after phosphorus poisoning.* The identity of this peptone-like substance with true albumin peptones is still doubtful. Finally, according to Bechamp, a protean substance can be precipitated from every normal urine by three times its weight of 88 to 90 per cent. alcohol, which, after washing, is soluble in water. Bechamp has given it the name of nephrozymose.‡ It has furthermore been stated on high authority, that no test yet known will detect albumin in traces more minute than will the old heat and nitric acid test.

I have conducted a number of experiments with the view of throwing, if possible, more light upon this question, from which I select the following as examples:

First, I prepared a sample of pure blood serum from a healthy man, secured during traumatic hæmorrhage (epistaxis).

1. 50 cc of the above blood serum was diluted with 100 cc of distilled water and double filtered, and on testing the following was noted. The mercuric, brine, tungstate, ferrocyanic and heat and acid (nitric) gave very distinct reaction, showing albumin.

2. 50 cc of the above was diluted with 100 cc of distilled water, and still all tests gave reaction (positive.)

3. 50 cc of the last dilution was mixed with 100 cc of distilled water, and the following was noted. The mercuric, tungstate and brine tests gave the most distinct change. Heat and nitric acid, and ferrocyanic tests were still positive, but considerably fainter.

4. 50 cc of last dilution was added to 50 cc of distilled water, and the following noted. Mercuric and tungstate tests gave the most distinct change. Heat and nitric acid and brine were the faintest.

5. 50 cc of last dilution was added to 50 cc of distilled water, and the following noted. Heat and nitric acid practically failed to show any change, as did also brine. The mercuric and tungstate tests showed distinct change (positive.)

6. 50 cc of last dilution was still further diluted with 50 cc of distilled water, and the following noted. Heat and nitric acid and brine failed (negative.) The mercuric and tungstate gave distinct change (positive.) The temperature of the mercuric and tungstate tests was raised to 212° F. over a spirit lamp. The opacity was not in the least cleared thereby.

7. 50 cc of last dilution was further diluted with 50 cc of distilled water, and the following noted. The mercuric and tungstate tests gave perceptible reaction (positive.) The others failed (negative.)

8. 50 cc of last dilution was still further diluted with 50 cc of distilled water, and tests applied as before. The mercuric and tungstate tests both showed very faint but perceptible change (positive.) The others all failed as before.

9. 50 cc of the last dilution was further diluted with 50 cc of distilled water. The mercuric and tungstate tests now failed to show any change whatever. A tube of the diluted serum was compared with the tungstate and mercuric tests, and examined in various lights, but no difference could be distinguished.

The next experiment in this connection was as follows in general terms: The serum was obtained from a vesicated surface on a healthy man (save neuralgia.) The agent employed to produce the blister was cantharidal collodion. The experimented with this serum was conducted precisely similar to the last described, and gave substantially the same results.

I next experimented upon the fresh blood serum (18 hours after death) of a healthy pig; the blood being withdrawn from the carotid artery in killing the animal for use. The experiments with this serum were conducted similarly to those on the human blood serum, and the results were almost the same. A slight difference in favor of the heat and nitric acid test seemed to exist, that is to say, the heat and nitric acid test seemed to give positive reaction a little longer than in the case of human serum, but the mercuric and tungstate tests unquestionably detected the albumen diluted beyond the point where heat and nitric acid failed.

I next took 10 cc of human blood serum (from epistaxis case), and after diluting it with 90 cc of distilled water, I precipitated the paraglobulin therefrom, and double filtered. The solution was submitted to the same tests with substantially the same results, the mercuric and tungstate tests unquestionably showing distinct reactions considerably beyond the point of dilution, where heat and nitric acid failed to show any change.

In the case of egg albumen, however, the results will be found altogether different, as I have observed repeatedly; for instance, I took a weak solution of egg albumen in distilled water, and selecting as the most delicate tests, the potassio mercuric iodide and tungstate of sodium, I compared them carefully with the results of the heat and nitric acid test, which were as follows:

1. On the solution, as prepared, all three tests reacted distinctly (positive), showing albumen precipitate.

2. 50 cc of the solution was diluted with 50 cc of distilled water, when all three tests still showed reaction positive.

3. 50 cc of last solution was next diluted with 100 cc of distilled water, when all three gave reaction, though faint. The heat and acid, if anything, most distinct.

4. 50 cc of last solution was next diluted with 50 cc of distilled water, and the following noted. The heat and acid and mercuric tests gave a faint but perceptible change, distinguishable only on comparing them with a similar sized tube of distilled water, in front of a dark background. No change could be perceived with the tungstic test.

5. 50 cc of last solution was next diluted with 50 cc of distilled water, and the three tests applied. On holding them side by side, in various lights, no appreciable difference could be distinguished between any of the tests and a similar tube of distilled water, though examined by several individuals.

Thus it would seem there is a greater difference between the two native albumens (egg and serum) than has been generally supposed. I believe that heat and nitric acid is a peculiarly delicate and appropriate test for the former, as I have noted in testing, in the presence of minute traces of egg albumen in distilled water, that the reaction produced by heat and nitric acid is considerably more pronounced than by any other test. The coagulum seems more dense and opaque, but it is about equal to the mercuric test as to minuteness of quantity it will detect.

Now as to physiological albuminuria, so-called. It is surprising how many people in apparently perfect health have small traces of albumin in their urine; even by the heat and nitric acid test, if properly and carefully applied, it will probably show traces of albumin in 8 or 10 per cent. of such individuals. I believe, as a result of my own observations, that the majority of people of all ages have traces of albumin in their urine, either occasionally or constantly, as determined by the mercuric and tungstic tests.

A number of observers, Senator, Leube, and lastly Chateaubourg, have recorded results from examinations on a large scale, which are quite startling to believers in the pathological significance of albumin in small quantities in urine. Chateaubourg, of Paris,* within the past year, has made a large number of examinations on healthy individuals, of which the following are a few of the results: 98 soldiers, from twenty-one to twenty-five years of age, were first selected and their urine obtained on Monday (hence there was no fatigue duty the day previous), 3 hours after the midday meal. Of the 98 samples, 44 showed the presence of albumin.

* Annalen des Charité Krankenhauses zu Berlin, Band 15, p. 9.

‡ Neubauer and Vogel's Analysis of Urine, page 100, (1879.)

*Chateaubourg Recherches sur l'Albuminurie Physiologique, Paris, 1883.

In July, 1883, he tested the urine of 94 soldiers, five hours after a meal, and 76 contained albumin, 82 per cent. He examined, at the Hôpital des Enfants Assistés, the urine of 142 healthy children, from 6 to 15 years of age, 111 of which contained albumin. Of 231 soldiers, on fatigue duty, whose urine was examined, he found albumin in 201 cases. I believe the test used by Chateaubourg was the potassio mercuric iodide. It cannot be claimed, that in all these cases the albumin was the result of pathological change, however slight; for Chateaubourg distinctly says, the urine of many of these cases was submitted to the microscope without finding any evidence of kidney lesion.

I have personally obtained very similar results from observations on a considerable (though smaller) number of cases. I have examined the urine of many healthy persons, where the urine was otherwise normal, save that it showed the presence of albumin on the application of the mercuric and tungstate tests, but no reaction could be found with the heat and nitric acid, however applied. When I say, the urine of these persons was normal, I mean in appearance, sp. gr., in quantity and reaction, and I carefully examined it with the microscope, going over several slides, but failed to find casts, renal epithelium, or bacteria.

It may be thought, perhaps, by strong believers in the delicacy of the heat and nitric acid test, that where it failed, and other tests showed albuminous reaction, the failure may have been due to want of the precautions necessary to insure success. So far as my own manipulations at least are concerned, this could not very well be the case. I am aware of the fact, that of all tests the heat and nitric acid requires the most care and precaution to insure accuracy.

One of the most serious objections to the heat and nitric acid test, especially in cases where albumin is present only in small quantity, is the fact that if the acid be not added in sufficient quantity, we sometimes fail to get any change; and, on the other hand, if too much acid be added, it will dissolve small traces of albumin: thus in either case the test may be negative.

My friend, Prof. Walter S. Haines, of Rush College, has suggested to me a method of procedure, which I think obviates this difficulty. In applying the nitric acid to the urine, he inclines the test tube quite obliquely, and thus allows the acid to flow slowly down the side of the tube and through the urine (which latter it does owing to its greater gravity) to the bottom, leaving behind, the urine acidified in increasing intensity, each layer from the surface to the bottom. Some of these strata will be found of exactly the proper acidity to give the albuminous reaction.

In all cases where heat and nitric acid failed, and other tests showed any change, the former was given the benefit of most careful application, and repetition in several forms, among others the double method of Dr. Brown-Sequard,* was always tried; also the method of complete cooling and re-application of heat, as advised by Tyson.‡ In fact, the heat and nitric acid test was given by far the most care and attention of all, because, after the results obtained with it on egg albumen, I was working under the conviction that the heat and acid test would, if properly applied, reveal the presence of albumin, where any other known test would do so, for I had made my observations on egg albumen before I had experimented upon blood serum.

From the sum of my observations I draw] the following deductions:

First:—That certain of these newer tests, as the potassio mercuric iodide, sodium tungstate, picric acid, and perhaps the brine and ferrocyanic, will detect serum albumin in more minute quantities than will the heat and nitric acid test.

Second:—That the most delicate and reliable of these, and possessing the fewest objections, are the potassio mercuric iodide and sodium tungstate tests.

Third:—That the test papers of Dr. Oliver, especially the sodium tungstate and potassio mercuric iodide, are handy measures for preliminary examinations of urine at the bedside of the patient for determining the presence of albumin in the urine.

Fourth:—That to be entirely reliable, the correcting influence of heat must be employed in applying all these newer tests.

Fifth:—That the potassio mercuric iodide, and sodium tungstate tests, and also the test papers of Dr. Oliver, are undoubtedly valuable acquisitions to our resources; inasmuch as through their greater delicacy and more ready applicability, they are likely to lead more frequently to resort to the microscope, and thus detect the early stages of certain forms of nephritis, which might otherwise escape observation, till too late to save or prolong life.

Sixth:—That the question of the near future, as to albumin in urine is likely to be, not only is it present, but what quantity of albumin in the urine constitutes a pathological condition? and this question must be largely determined by the microscope. —Dr. Chas. W. Purdy, in *Jour. Amer. Med. Association.*

*Archives of Scientific and Practical Medicine, 1873.

‡Practical Examination of Urine, 1883.

The Place of Pancreatin in Therapeutics.—The great importance attached to the nutrition of the sick, in modern medicine, has naturally and very reasonably led to the administration of digestive ferments to aid in the preliminary act of digestion, and also to the adoption of many devices for conforming alimentary substances to the impaired digestive functions, which attend all acute and most chronic diseases. This impulse has been so potent as to force the pendulum of medical opinion and practice far beyond the point of equilibrium, and which at the present time seems to oscillate between the extremes of scepticism on the one hand and an easy credulity on the other. The rôle which pancreatine is now playing in this important field of therapeutics, the wide range of its digestive activities, and the extraordinary attention which has been directed to its use by the late Lumleian lectures by Dr. Roberts, are sufficient reasons for inquiring into its proper use. It is by no means uncommon for men even of genius and learning, who have been fortunate or wise enough to make a step forward in the treatment of disease or the amelioration of human maladies, to be carried by their enthusiasm and the exaltation which attends success to attribute to their discoveries or improvements an extent of application which subsequent observation shows to be unwarranted.

This remark is well illustrated in the title given by Corvisart to the first pamphlet issued by him on the use of pepsine, "Dyspepsie et Consomption." The very great control over the processes of digestion and nutrition which his discovery of the use of pepsin afforded, impressed him with the belief that its influence would be sufficient to arrest the ravages of consumption.

The question to be discussed in this paper is not as to the relative value of different digestive ferments, but, admitting the value of all, to determine what is the rational and effective mode of using pancreatin. The proposition submitted, and an attempt to prove which will be made, is, that pancreatin cannot be effectively or usefully administered by the stomach, but can only be employed for modifying foods before they are taken. The argument will be presented in relation to the anatomical, physiological, and experimental aspects of the subject.

When we examine the anatomical arrangement of the alimentary canal, and the order in which the digestive ferments are delivered to and brought into contact with the ingested food, we are struck with this peculiarity, that they are generated and delivered at points remote from each other. Comparatively recent demonstrations have shown that the pancreatic fluid possesses three distinct ferments, viz., amylolytic, proteolytic, and emulsifying. Now it would

seem to be a fair deduction and sound reasoning to conclude that if the pancreatic fluid could effectively perform these several offices upon crude food, then the salivary and gastric secretions were useless and in excess of any want of the system. But their presence is proof of their necessity, and the existence of ferments lower down in the alimentary canal, supplementary to them, is proof that their action is preliminary, and the fact that their offices are performed where the next lower ferments cannot reach them is proof of their incompatibility. So much may be concluded by *a priori* reasoning from the anatomical arrangement. The physiological aspect of the case will be found in harmony with and confirmatory of the above. The gastric juice is not only known to be acid, but its ferment, pepsin, is inert in any other than an acid medium, while the pancreatic fluid is alkaline and is inactive in any other vehicle. This one physiological fact is sufficient to show that the two ferments cannot act together. One other physiological fact goes to establish the same conclusion, that is, the destruction of the pepsin in the duodenum by the action of the bile. Herman ("Elements of Human Physiology," p. 174), speaking of intestinal digestion, says: "Solution of albuminous bodies is effected, most probably, by the pancreatic juices, as the activity of the gastric juice which reaches the intestine is destroyed by the bile." Dr. Lucien Corvisart, speaking of the pancreatic digestion (*Braithwaite*, No. xxxix.), says: "When the gastric and pancreatic juices are separated they act in succession, and thus the peptone may be doubled; but when mixed, the action of each is checked—they neutralize each other. Nature prevents this conflict, first, by separating the two juices by the pylorus; second, by the bile, which destroys the pepsin, as shown by Poppenheim." Certainly the demonstrated fact that the activity of the pepsin is arrested in the duodenum, not only by the alkalinity of its fluids, but by the direct agency of the bile, is fairly conclusive evidence of the incompatibility of the two agents which meet these. But the question still remains, can pancreatin *pass through the stomach*, come out unimpaired, and in the duodenum take up its office and play the same rôle as freshly secreted pancreatic juice? In other words, can pancreatin be usefully employed by administration by the mouth?

The extensive use of remedies in which pepsin and pancreatin are combined, implies a belief on the part of many physicians that pancreatin *can survive* the action of the gastric juice and pass on unharmed into the duodenum, where it is free to perform its office. So far from this being the case, however, there are many reasons for believing that pancreatin is digested in the stomach like any other proteid. Lehman says, "the principal constituent of the pancreatic juice is a substance resembling albumen or casein." Herman ("Elements of Human Physiology," p. 142) says: "Its specific constituents are several albuminous bodies, which are scarcely distinguishable from albumen itself, and to which many observers ascribe the ferment action" (pancreatin). Now it is difficult to understand why a substance of the nature of albumen or casein should not be digested by pepsin, whose sole object and use is to digest albuminoids, and whose ability to digest that whole range of substances is well known. But the determination of this point does not rest upon inferences. It has been shown by Kühne that "pepsin in acid solution actually destroys trypsin (one of the constituents of pancreatin); trypsin in alkaline solution does not possess the converse power of destroying pepsin, which, however, is altogether inactive in an alkaline fluid."

Mr. E. Scheffer, of Louisville, Ky., has demonstrated, by careful experiments, the fact that pancreatin digested with pepsin loses its activity in respect to all its properties. From a number of experiments, ingeniously contrived for the purpose of demonstrating this, want of space will permit quoting only two: First, "To a solution of one-half grain of pepsin, in two ounces of acidulated water, was added two ounces of pancreas liquid, obtained by rubbing down and beating three ounces of chopped pancreas with small quantities of water until after three strainings four ounces of liquid were obtained, which readily saccharified starch at the temperature of the air. The pepsin solution containing the pancreas liquid, after four hours' digestion, was filtered, neutralized, digested with starch-paste, and tested, but no sugar action was obtained." Second, "To two ounces of pancreas extraction was added a solution of one-fourth grain of pepsin in two drachms of water, acidulated with five drops of hydrochloric acid, and the mixture treated as described before. Neither from the acid nor from the neutralized solution, after digestion with starch-paste, did I obtain any sign of sugar by Trommer's test; while the pancreas extraction, by itself, treated with starch, had given the most copious precipitate of oxidulated copper."

To the same effect are the following experiments, made by Dr. William Roberts, of Manchester, England,* for the express purpose of determining the question under discussion:

"I prepared a solution of lactic acid corresponding in saturating power to the normal gastric acid (2 per 1,000 HCl). To fifty cubic centimetres of this dilute lactic acid I added five cubic centimetres of a solution of pepsin, and five cubic centimetres of an active extract of pancreas. I prepared a second similar, but substituted filtered saliva for the pancreatic extract. The mixtures were then placed in the warm chamber for one hour. At the end of this period the solutions were exactly neutralized and tested, they were both found to be absolutely inert, not a vestige of amylolytic nor proteolytic power had escaped destruction.

"I had an opportunity of testing the same question in a still more satisfactory way. While I was examining the throat of a patient suffering from an ailment which did not affect his general health, a portion of the contents of the stomach was ejected, and fortunately caught in a clean vessel. This was immediately filtered, and about ten cubic centimetres of clear acid solution was obtained. The period of digestion was three hours after breakfast. One-half of this was devoted to testing its saturating power. It was found to possess an acidity very nearly corresponding with that of normal chyme. To the remaining portion five drops of extract of pancreas and five drops of filtered saliva were added, and the mixture placed in the warm chamber for one hour, at the end of that time it was exactly neutralized and divided into equal portions. One portion was tested with a drop of starch mucilage and found to be absolutely devoid of amylolytic power. The other portion was added to an equal volume of milk rendered slightly alkaline with carbonate of soda, and was then placed in the warm chamber. Not the slightest digestive action was produced on the milk in twelve hours.

"With this evidence before me, I am unable to accept the conclusions of Defresne and others in Paris, who allege that saliva and pancreatic preparations can resist the normal acidity of the stomach in full digestion, and who recommend the administration by the mouth of pancreatic preparations during the period of chymification."

It appears then that the evidence afforded by the anatomical distribution of the digestive fluids, by the physiological constitution of these juices, as well as the conditions under which they perform their functions, and the results of experimental inquiry, all point to the conclusion that pancreatin not only cannot act in the presence of the gastric juice, but is deprived, by gastric digestion, of all power to perform its functions.

There remains one more aspect of the question to be considered, viz., can pancreatic preparations by any device be protected from the action of the gas-

*Lumleian Lectures, page 56.

tric juice in their passage through the stomach, in such manner as to preserve their digestive potency intact until they arrive in the duodenum, where the conditions are favorable for their action?

Dr. Fothergill proposes to accomplish this by administering ten or fifteen grains of bicarbonate of soda with a dose of liquor pancreaticus at "the tail of the digestive act." "This passes it securely through the stomach; just as a guard of soldiers sees a merchant convoyed over an unsettled frontier infested by robbers." Theoretically considered this expedient is open to several objections.

First, the alkali and the liquor pancreaticus are commingled, hence the pancreaticus is as much exposed to the attack as the alkali; as if the soldiers who were sent to guard a company of merchants should mix indiscriminately with their unarmed charge, an attack upon this promiscuous assembly would be as likely to prove damaging to the guarded as to the guards. If the alkali could be made in some way to surround the pancreatin, so that the acid gastric juice could be neutralized before the pancreatin became exposed, more certainty would attend the device.

Second, it must not be forgotten that ingesta of no kind pass directly through the stomach. It is the nature and office of the stomach to retain its contents, and to pour out gastric juice upon them. Under these circumstances how long would ten or fifteen grains of alkali resist the acid of the stomach? It is proposed to give the alkali and pancreatin an hour and a half or two hours after the ingestion of a meal, at "the tail of the digestive act." Does not the digestive act continue from four to six hours? Can "the tail of the digestive act" be determined? Does not every fresh ingestion provoke a fresh discharge of gastric juice? Certainly such a procedure, to say the least, must be subject to very great uncertainties. The stomach is well called an "acid gulf," "which we have to guard against, else our artificial pancreatic secretion is useless, of no earthly avail." It seems more probable that this "acid gulf" would swallow up any adventurous pancreatin which should attempt to cross it, than that the rash adventurer should cross it in safety. But, theory aside, it is claimed that clinical experience justifies the conclusion. It, however, should not be forgotten that clinical experience is invoked in defence of the use of pancreatin, not only unguarded by an alkali, but actually in combination with acidulated pepsin, which both Dr. Roberts and Dr. Fothergill assert to be fatal to pancreatin. The whole course of therapeutics is strewn with the wrecks of remedies which have been foisted upon the profession by the *supposed results* of clinical observation. Perhaps nothing is more delusive than a fragmentary and ill-digested collection of clinical facts. The sources of error are too numerous, and the conditions too complicated, to allow clinical observations to determine any important conclusion until many facts, well observed and carefully collated, have been brought to bear on the question. More especially must this be the case when the clinical observations contravene what are supposed to be well-demonstrated scientific facts, as in the case under consideration. Science will be of little avail in promoting the advancement of the medical art, if facts established by research and observation are to be lightly set aside by clinical observations short of absolute certainty. It seems far more reasonable to conclude that clinical experience will in the end conform to scientific demonstrations.

But whichever way the progress of observation and experience may determine this question, pancreatin has before it a wide therapeutic field. Second only in importance to the promotion of the digestive act within the organism is the adaptation of foods to the conditions of disease. The whole subject of the nutrition of the sick may be influenced by the use of this agent. The patent fact that the stomach, in common with all other organs of the body, is impaired by all acute and many chronic diseases, affords a wide scope for the use of artificially digested foods; but more especially is pancreatin likely to revolutionize the vexed question of infant feeding.

The principal obstacle to the successful administration of cow's milk is alleged to be the density of the coagulum formed by the action of the acids of the stomach upon the casein of the milk, thereby preventing its proper digestion. The devices for overcoming this difficulty have been numerous, but none of them entirely satisfactory. The use of pancreatin preparations appear to meet this difficulty fully. Dr. Roberts* ascertained by many experiments that pancreatin acts with great rapidity upon the casein of milk, and if not fully peptonizing it, certainly rendering it non-coagulable by heat or acids. This would seem to leave little to be desired in the matter of the adaptation of cow's milk to the purposes of infant-feeding. In the case of feeding infants upon farinaceous substances containing a large preponderance of starch, as they all do, the objection to their use is deemed to lie in the inability of very young infants to saccharify starch, either by the action of the salivary or pancreatic secretions. This inability to digest starch has been attributed to non-development of the salivary and pancreatic functions, which, it is alleged, has been physiologically demonstrated. But over and above any demonstrations, such inability might well be inferred from the fact that infants are constituted to receive, and the Creator has provided for their use, a food which requires the action of neither salivary nor pancreatic digestion. The salivary secretion, being only diastasic, finds nothing in the milk to act upon. The gastric juice is amply sufficient to digest the casein, and as to the fat in the milk, it does not require the action of the pancreatic juice, for *all nascent milk* is in a *perfect state of emulsification*. So it appears that the infant is fully able to digest milk through the action of the stomach alone, and we may fairly infer that functions would not be provided for before there was need for their employment. This amylaceous apepsia of infants has been met by numberless devices, as is attested by the legion of infants' foods, which, by methods more or less effective, have been devised to overcome it. The most complete as well as the most scientific of these methods, is that known as Liebig's, which consists in saccharifying the starch by the action of the diastase in malt. This is an expensive and somewhat difficult process, so much so as to be unsuccessful in the hands of the average mother or nurse, and has consequently fallen into the control of manufacturers. But by the use of artificial pancreatic preparations this conversion of starch is accomplished with the minimum of trouble and skill. It consists simply in adding to the cooked food, at blood-heat, the pancreatic liquid, and allowing it to stand in a warm place one hour. A process so simple and so effective certainly seems likely to banish many of the infant foods which are now urged upon the attention of mothers and physicians.

The question, "What is the place of pancreatin in therapeutics?" may, in view of the facts set forth above, be confidently answered: Not as a remedy to be administered internally, but as an agent for adapting foods to the impaired digestive functions of the sick, and especially to the preparation of cow's milk and farinaceous foods for infant feeding.—J. S. Hawley, M. D., in *Medical Record*.

Kairine—The Latest Rival of Quinine.—This new antipyretic agent has as yet attracted but little notice in this country, although it has for some time been the subject of investigations by our German confrères. It was discovered about a year ago by Dr. Fisher, of Munich, who states that it is the hydrochloride of oxyethylquinolinehydrid. If there is anything in a name, there ought to be no doubt of

*Lumleian Lectures.

the value of the remedy, but this is a busy world, and life is short, so the name has been mercifully changed to kairine. The testimony thus far collected, concerning the properties of kairine, is somewhat conflicting. Dr. Girat has experimented largely with it on animals, and has found its lowering effects upon temperature to be very constant. It also slows the pulse and diminishes the number of respirations. He administered the drug hypodermically, and states that the member into which the injection was passed became paralyzed. The sensibility of the part was blunted, passing sometimes to complete anæsthesia. Elimination occurs, in part at least, by the kidneys, and is tolerably rapid, the presence of the substance in the urine being determined within twenty-five minutes after its administration. The urine acquires a dark green color. According to Dr. Girat's experiments, the toxic dose is said to range between one and two grains to the pound of the weight of the animal. Dr. Filehne (Berliner Klinische Wochenschrift, April 21, 1883) concludes, from observations made by him in disease, that kairine is a most valuable febrifuge, effective in all conditions accompanied by elevated temperature. He has employed it with success in typhoid fever, acute articular rheumatism, septicæmia, phthisis and pneumonia. He recommends its use tentatively in commencing doses of seven and a half grains per hour for four hours, or until the temperature has fallen to 100°F. The dose is then lowered to three or four grains, to be again increased when the temperature begins to rise. It is stated that by carefully experimenting during the first day, the proper dose may be ascertained for each individual, which may then be adhered to in the subsequent treatment. These favorable effects have not been recorded, however, by all observers. Professor Riegel reports most unsatisfactory results in the treatment of pneumonia by kairine (Allgemeine Medicinische Central-Zeitung, July 28, 1883). He was unable to obtain any notable reduction of temperature by four hourly doses of seven and a-half grains each, and even larger amounts were often powerless to produce the desired effect. Even when he succeeded in reducing the temperature nearly to the normal, it often rose again in spite of repeated doses of the remedy. As regards the pulse, it was by no means reduced in frequency as the temperature fell, and, furthermore, it was much weakened. An improvement in the subjective sensations of the patient, as described by Filehne, was not met with, but, on the contrary, there was repeatedly observed such a depression, amounting almost to collapse, that it was necessary to discontinue the kairine and resort to stimulants. The same effect has been noticed by Seifert. Professor Riegel concludes that kairine is a dangerous remedy, in pneumonia at least, chiefly because of its depressing action upon the heart, and he cautions against its use in asthenic forms of the disease. It is evident that further trials are necessary before the exact value of this new substitute for quinine can be determined, and it is doubtful whether it will be able to maintain the high character as a safe and certain antipyretic which the early experimenters claimed for it. In fact, few new remedies answer fully to the expectations of their introducers.—*Medical Record.*

Kairine in Typhoid Fever.—In the recent discussion on typhoid fever at the Academy of Medicine I alluded to the value of kairine in controlling the temperature of typhoid fever, and to the appearance of albumen in the urine when intestinal hemorrhage occurred. I have been requested to give more in detail my experience with kairine, and likewise my authority for the statement as to the appearance of albumen in the urine after intestinal hemorrhage.

There are three varieties of kairine in the market, namely, kairine M. (or methylic), and kairine E. (ethylic), and kairoline E. (ethylic), (W. Filehne, Berlin. Klin. Woch., No. 6, 1883). Kairine M. is given in doses of 7.5 to 15 grains. The temperature is rapidly lowered, and rises very rapidly. The effect of the administration of 15 grains of kairine M. passes off in about three hours. Profuse sweats appear on the beginning, and cease with the action of the remedy. The temperature then rises rapidly.

The effects of kairine E. (kairoline E. is said to act in the same way) are said by Filehne to persist for some six hours when administered in doses of 20 to 30 grains. Sweats occur as with kairine M. At the end of the six hours the temperature gradually rises. Filehne made many trials in acute and chronic febrile troubles and obtained always the same results.

He advises the use of kairine E., since the administration of it is more easily managed and the effects more lasting. He prescribes it in the following manner: The first day of any disease when antipyretics appear indicated, the temperature should be taken every two hours, and when it is decided to administer the remedy, 7½ grains are given every hour until four doses have been taken; or, more exactly, this amount is administered until the temperature falls to 100.4°F. This result obtained, he gives from hour to hour only 3½ grains, but as soon as the temperature begins to rise, or the patient complains of a chilly sensation, he resumes the administration of 7½ grain doses. If hourly doses of 7½ grains do not lower the temperature, the amount given hourly is increased to 10 or 15 grains until the temperature is lowered to 100.4°F.

I had not read the communication of Filehne when I first made use of kairine, and I was not then aware that there were several varieties of kairine. The method of administration that I adopted was to begin with 7 grains of kairine, and have the temperature taken every hour. Unless the temperature was above 102°F. I did not regard the remedy indicated, but when the temperature was above this point I had the remedy administered and the temperature taken hourly. If after the first dose the temperature began to fall, say ½° to 1° in the hour, I continued the drug in doses of 3½ grains every hour or half hour, and as soon as the temperature had fallen to 101°F. I discontinued the medicine, and directed that the temperature be taken every hour or two, and that on the slightest indication of a rise of temperature that 3½ or 7 grains be administered at once, and repeated as often as necessary.

I do not believe it wise to reduce the temperature below 101°, since, if the temperature is quickly reduced to a lower point it is more apt to rise rapidly, and if not, you may have some of the signs of collapse appearing—cold extremities, failing heart action, cyanosis, etc.

Moreover, if the temperature has been brought down to 101° the amount of tissue destruction will not be very great at that degree, and cardiac paralysis will certainly not be likely to occur.

Considerable attention has been given to the occurence of chills during the administration of kairine, and this has been regarded as a very great objection to the use of the remedy, and indeed the chills have been regarded by some as having been induced by the drug. Bear in mind that there are two kinds of chills—one, well called a "nervous chill," which is often observed in hysteria, spinal irritation, and which is also observed in a certain form of epilepsy, but in these chills there is no rise of temperature, or no rise of over 100°F. The second variety, always, I may say, accompanies the rapid rise of temperature. Given any disease in which the temperature rises above 102°F. in a few minutes or an hour, and you almost invariably find that a chill has occurred, and if closely watched it will be observed that the rise of temperature to a certain extent has preceded the chill—has been present throughout the cold stage. The peripheral temperature may be low, but the oral, rectal, urethral and vaginal temperature will always be found high. The axillary temperature cannot be depended upon. The occurrence of a chill in any fever, as typhoid fever, treated by kairine, will always be found as succeeding and accompanying a rise of temperature. If a close watch be maintained as to the exact degree of tem-

perature of the body, the early administration of kairine will prevent the occurrence of a chill.

The kairine which I have used has been the kairine E., and I am not aware that kairine M. can be found in this city.

It seems to me, however, that it is very important that the profession should know which form of kairine they are using, and be sure that the preparation is a good and pure one. I have come to look upon kairine as one of the most valuable antipyretics that we possess, and I trust that its use will be greatly extended.—T. A. McBride, M. D., in *Medical Record*, Dec. 15, 1883.

Yerba Santa (Eriodyction Californicum) as a Means of Disguising the Taste of Quinia.—[We reproduce the following by request. It is an article by Dr. H. M. Kier, of Knight's Landing, California, and appeared in the March number, 1879, of the Pacific Medical and Surgical Journal.—ED. GAZ.:]

Living in a malarious country, where intermittent and typhoid fevers prevail, physicians cannot be indifferent to the many urgent requests of their patients to provide them with a remedy devoid of bitter taste, and which can be taken easily. Accordingly, in furtherance of this universal desire, I have experimented to quite an extent in the endeavor to obtain an innocent, palatable vehicle for the administration of the bitter, active anti-periodics; but with indifferent success, until some four or five years back, I commenced the use of the yerba santa, in the form of elixir and syrup, and found it to be a most excellent remedy to disguise the taste of many bitter drugs. The well-known bitterness of the quinia salts forms a great objection to their use, but when given in combination with either of the preparations above named, in the proportion of ten to twenty grains to the fluid ounce, they are rendered palatable, or at least tolerable, and are retained much more readily by a delicate stomach, and can be given in this manner without the patient's knowing anything of the nature of the remedy prescribed.

The peculiar property of the yerba santa leaf, in imparting to quinine the taste of starch when chewed and held upon the tongue for a second, has been well known for years to the old settlers of California, and it was a knowledge of this fact which first led me to employ it in the form above indicated.

As regards the plant itself, my experience has taught me that, like many of the so-called "New Remedies," of which, singularly enough, we have heard so much lately, it has but little, if any, special therapeutical power, and can be given *ad libitum* in any quantity or form prepared.

Any competent pharmacist can prepare a syrup or elixir in the manner he may deem best. However, an admirable syrup may be obtained by boiling for an hour two ounces of the fresh, or recently dried leaves, with fourteen ounces of water and two of glycerin, percolating through the residue an ounce of brandy, and adding to what should be a pint of the product, two pounds of sugar.

A working formula for the elixir can be modeled after that given us in the U. S. Dispensatory for elixir calisaya; substituting for the four ounces of yellow calisaya seven to eight of the yerba santa, and for the syrup one pound of glycerin and eight to ten pounds of sugar, this latter to be dissolved by gentle heat in the percolate, after filtration.

Note on the Use of the Oil of Pongamia Glabra (Vern Kurzel) in Pityriasis Versicolor of India.—Pongamia oil has long had a repute as a remedy in skin diseases, rheumatism, unhealthy ulcers, etc. Chakradtta mentions it under the names of Karanja and Nactamala, and gives several prescriptions in which it is combined with other active drugs of known utility in skin diseases.

Ainslie mentions the use of the juice of the root for cleaning foul ulcers, etc., and of the oil in itch and rheumatism. Gibson speaks highly of the oil as a remedy in scabies, herpes, and other cutaneous diseases of a similar nature. As the specific character of the skin diseases in which this oil has been used, is not clear from the description of the above mentioned writers, I determined to make some experiments with the oil, and selected pityriasis versicolor as a common and troublesome affection for the first experiment. Several cases occurring on the face, neck and shoulders were cured in less than a fortnight, by rubbing the oil in twice a day. I would now ask the members of the society to try the oil in other skin diseases, especially those which are attended, like pityriasis, by the growth of fungus. The oil is always obtainable, being used as a lamp oil by the country people in Salsette. I place a sample of it upon the table. It is bitter and has a peculiar odor. It solidifies at 8°C., and even in Bombay in the cold weather deposits some crystalline fat. The seeds yield in the ordinary native press 27 per cent. of oil, sp. gr. 0.945. Sulphur, acetic acid, iodine, and goa powder have been used as remedies in pityriasis; but I consider this oil more effective than acetic acid, and it has the advantage over iodine and goa powder of not discoloring the part (often the face) to which it is applied.—Surg.-Major Dymock, B. A.

Cure of Obstinate Scrotal Eczema by Hoang-Nan.—Hoang-nan is a vegetable substance of repute in Tonquin as a remedy against rabies, the bite of venomous serpents, leprosy, and several other grave affections. It contains nearly three per cent. of brucine and a small quantity of strychnine. Dr. Barthélemy relates in the *Bulletin Général de Therapeutique* of August 30, 1883, a case of chronic eczema of the scrotum in which this substance was employed with most happy effect. The patient, a gentleman about fifty years of age, had suffered for ten years from eczema of the scrotum, perineum, and upper and inner parts of the thighs. He had consulted numerous physicians, and had tried every conceivable remedy without experiencing any relief. Dr. Geneuil, the last physician to whom he applied, having read of the efficacy of hoang-nan in leprosy, determined to try it in this case. The patient commenced with seven grains per diem, gradually increasing to forty-five grains a day, in divided doses. While taking these large doses he felt the physiological effects of the drug (muscular tremors, trismus, and vertigo), but persevered with the remedy, and was rewarded at the end of ten days by a perfect cure of his affection. The amounts taken were larger than had been advised by Dr. Geneuil. In all five drachms were taken. The patient was seen eighteen months later, and had then had no return of the eczema.—*Medical Record.*

Tannate of Sodium in Chronic Nephritis.—Tannate of sodium has been recommended by Lewin instead of tannin, in albuminuria in order to lessen the excretion of albumen, It has been tried by Ribbert on animals. Ribbert ligatured the renal artery in rabbits for an hour and a half and produced albuminuria. He then injected a one-half per cent. solution of tannin into the jugular vein, extirpated the kidney, and examined it microscopically. He found that much less albumen occurred in the glomeruli when tannin was employed, showing that it had lessened the excretion of albumen. A similar result was obtained with tannate of sodium, and in his experiments with this substance the albumen was generally completely absent from the glomeruli. Dr. Briese has tried the tannate of sodium upon patients suffering from chronic albuminuria. He finds that some patients bear it well, and can take it for a month without any disagreeable consequences, while others vomit after every dose, and in others again the stomach and intestines are affected in two or three days. In the four carefully observed cases which he records, the tannate of sodium was of no use whatever. It did not lessen the quantity of albumen excreted, nor did it after the course of the disease. *Deut. Arch. f. klin. Med.* p. 220, vol. xxxiii. —*The Practitioner.*